

CENTRAL WEST AWARENESS AND ATTITUDES TO NATURAL RESOURCE MANAGEMENT (NRM) BENCHMARKING SURVEY

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Report Prepared for:
Central West Catchment Management Authority
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EXECUTIVE SUMMARY

The primary objective of this project was to benchmark community awareness, attitudes and beliefs in relation to NRM and the CMA. The project provides the basis for benchmarking the existing level of community attitudes, awareness and involvement in natural resource management in the Central West and provides a reference point for ongoing monitoring and evaluation of the CMA's community engagement and capacity building over the life of the CAP. It is important to recognise that this is a benchmarking study and not an explanatory study which seeks to identify and explain the underlying causes or determinants of community attitudes or beliefs.

The project methodology was based on two separate telephone surveys within the Central West region which included (i) a community survey of 2,000 residents including 1,500 landholders and 500 urban residents and (ii) a survey of 35 regional stakeholder organisations.

REGIONAL COMMUNITY SURVEY

The average size of rural properties was found to be 691 hectares, although there was considerable variation across the region, with the average property size in the Macquarie Bogan being 2,695 hectares, while in the Upper Macquarie it was 218 hectares. Residents were found to have lived within their local area for approximately 27 years, with the mean age of all residents being 52 years.

Beliefs about Environmental Health

Properties were considered by landholders to be healthier now when compared to 10 years ago. This was the case in all subregions with the exception of the Macquarie Bogan, where there was no change in the health of properties over the past 10 years. Larger properties were found to have had the greatest improvement in environmental health over the last 10 years.

In contrast to the health of properties, when comparing the health of the natural environment in the local area 10 years ago to what it was today, the environment was seen as far healthier 10 years ago than it is now. Landholders also believed the health of their local area to be significantly higher than urban residents as did landholders on larger relative to smaller properties.

Environmental Issues on Properties

Amongst landholders the three most commonly reported environmental issues on properties were weeds (67%); introduced pests (51%) and erosion from wind and water (40%).

Problems with weeds appeared to be more common in the Macquarie Bogan, Upper Castlereagh and Upper Macquarie subregions and on larger as compared to smaller properties. Landholders identified the two most significant causes of weeds on properties to be the lack of weed control and the drought.

Pest animals were more of an issue on larger properties and amongst those properties in the Upper Castlereagh and Upper Macquarie subregions. The two most common beliefs about the increase in pest animals was the lack of adequate fencing and the drought.

A greater frequency of landholders reported erosion as an environmental issue in the Upper Macquarie subregion and on larger properties. Landholders believed that erosion was caused by the drought and to a lesser extent of overgrazing.

Environmental Issues in the Local Area

All urban residents were asked to identify environmental issues that they believed were occurring in their local area. Amongst urban residents the three most common issues were weeds (75%); introduced pests (54%) and erosion from wind and water (52%). These were the same environmental issues reported most frequently by landholders as occurring on properties. In addition, urban residents were also asked to identify the most important issues that needed to be addressed. Amongst urban residents these issues included climate change impacts (23%); weeds (16%) and the over allocation or use of water (13%).

Funding and Action to Address Environmental Issues

In order to better identify the priority actions to address NRM issues on properties, all landholders were asked to identify what activities they would undertake if they had \$20,000 to spend on improving the condition of land and water on their property. Primarily as a consequence of the drought, 33% of landholders indicated they would install and develop water infrastructure on their property. Other activities included the planting of vegetation (19%), controlling weeds (15%) and undertaking fencing (15%).

In addition, 87% of landholders indicated they would be willing to apply for funds to improve the condition of their property. With the exception of landholders on the smallest properties, willingness to apply for funds appears to increase with the size of the landholder's property. There is also a linear relationship between age and willingness to apply for funds, with younger landholders more likely to apply for funds than older landholders.

Water Efficiency and Use

Across the region the majority of residents believed more could be done to improve the efficiency of water use in urban areas and on farms. Support for this belief was highest amongst landholders and those respondents of middle age (36 to 55 years of age).

The belief that more water should be allocated to the environment yielded somewhat mixed support, with only half of all residents supporting this belief. Landholders were more likely to than urban residents to support this belief and there was also greater support for this belief amongst older residents

Native Vegetation and Biodiversity

There was significant variation amongst residents in beliefs about whether the amount of native vegetation set aside for conservation was too low. Urban residents, particularly those in the Upper Castlereagh subregion, tended to support this belief. In contrast landholders were less likely to support this belief. Furthermore landholders on smaller as compared to larger properties were also more likely to support this belief.

Across all residents in the region there was agreement that the health and condition of native vegetation was declining. However, relatively more support for this belief was found amongst urban residents; younger residents and landholders on smaller properties.

Cultural Heritage

Amongst the majority of residents in the region (66%), cultural heritage signified both Aboriginal and European heritage. In addition, 61% of landholders indicated a willingness to accept funding or assistance to protect cultural heritage on their property. This was highest amongst younger

landholders and those on smaller properties of less than 40 hectares. Not accepting funding or assistance to protect cultural heritage was primarily due to the belief amongst landholders that they did not have cultural heritage on their property. While this was the primary reason given by the majority of landholders, approximately 25% of landholders also raised procedural issues related to the funding process and issues related to property access.

Community Engagement

Across the region, 23% of residents indicated they had participated in organised NRM meetings or activities including Landcare. This was highest amongst landholders when compared to urban residents and increased amongst landholders on larger properties. Participation was also highest amongst the middle age (36 to 65 years) and lowest amongst younger and older residents.

The two most commonly reported reasons for not participating in organised NRM meetings or activities were that there was 'not enough time or too busy' (32%) or that they were not aware of meetings and activities occurring in their area (29%).

Amongst landholders the three most important sources of information on environmental issues were Local Government, State Government agencies and Landcare. In contrast, amongst urban residents the three most important sources of information on environmental issues were Local Government, the internet and friends or family.

The most preferred methods through which residents believed the Central West CMA should communicate were to inform people through local newspapers (36%) and mail information to them (35%).

Attitudes and Beliefs about the Central West CMA

Across all residents in the region 33% were aware of the CMA. Those who were aware of the CMA were more likely to be landholders than urban residents and amongst landholders it was generally those landholders who had larger properties and who lived in the Mid Macquarie, Upper Bogan and Upper Castlereagh subregions.

Amongst all residents in the region, 10% indicated they had contact or communication with the CMA, with the highest contact being amongst landholders and amongst those with larger properties.

The level of knowledge of the CMA across all residents in the region was relatively low. Landholders were found to be more knowledgeable than urban residents; participation in NRM activities was associated with greater knowledge of the CMA and being aware of NRM issues was also associated with better knowledge of the CMA. Amongst landholders, those on larger properties were more knowledgeable of the CMA and amongst all residents; it was those of middle age who were also relatively more knowledgeable of the CMA.

The majority of residents in the region agreed with the belief that the CMA was a Government department. However the majority of residents did not support beliefs that (i) the CMA's primary responsibility was controlling vegetation clearing; (ii) that the CMA only worked with farmers and (iii) that the CMA was primarily responsible for water management.

The majority of residents who were aware of the CMA believed the CMA ‘was doing a good job in the management of natural resources in the region’; were ‘supportive of the CMA and what it does’; and believed the CMA Board were implementing best management practices.

REGIONAL STAKEHOLDER ORGANISATIONS SURVEY

Across all 35 regional stakeholder organisations there was low to moderate knowledge of the CMA. However, the majority of stakeholder organisations believed the CMA was adequately resourced to implement the Catchment Action Plan and they had some knowledge of who was on the Board of Directors. Furthermore a clear majority of stakeholder organisations indicated they would respond positively to opportunities to work with the CMA.

The majority of stakeholder organisations also believed the current engagement process to be effective and an improvement over two years ago where it was generally reported to be somewhat ineffective.

In comparison to State and National averages, the CMA was shown to have a regional engagement process which was as effective as others at a State and National level. However, regional stakeholders indicated that two years ago the CMA had an engagement process which was less effective than other regional NRM bodies at a State and National level. As such the CMA has progressed considerably in developing an effective community engagement process within the last two years.

The majority of regional stakeholder organisations believe the CMA to be providing leadership in relation to NRM; that the CMA had initiated sufficient activities for community engagement; that the diversity of stakeholder groups involved in CMA activities has been appropriate; and that the CMA was adequately informed by different stakeholders, sectors and interest groups.

The responses by regional stakeholder organisations are similar to State and National averages. However, the CMA is slightly behind the State and National average in relation to it being adequately informed by different sectors, stakeholders and interest groups.

In relation to procedural issues associated with community engagement, the CMA is showing responses higher than that found in State and National averages for levels of trust, transparency and inclusiveness. It is only in relation to the level of participation and the level of cooperation amongst stakeholders, landholders and community that the CMA is somewhat lower than State and National averages.

AN ACTION PLAN

This report provides an assessment of current community awareness, attitudes and beliefs in relation to NRM and the CMA. At some time in the future the survey may again be undertaken in order to assess change over time. There is clearly a need to review the findings of the report in the context of future CMA activities and develop an action plan to address those areas in which improvement is sought. Such a proactive approach may include changes to the CMA’s community engagement strategy, the development of a marketing program for the CMA or changes to existing on ground activities and programs that are currently being implemented.

What is important is that the Action Plan is not developed in isolation from CMA activities but is embedded in the activities that are to be undertaken by the CMA over the next several years.

1. INTRODUCTION

The Central West Catchment Management Authority (CW CMA) is one of 13 regional NRM bodies in NSW. The CMAs were established in 2004 and each CMA has developed a Catchment Action Plan (CAP) and Investment Strategies to support the management of natural resources and achievement of NRM targets within each region.

In achieving the NRM targets as identified in the CAP, community capacity building and engagement are integral activities which need to be undertaken to *enable* the achievement of core NRM targets and objectives. These enabling activities, which lead to intermediate outcomes within the program logic of NRM, include for example increasing community awareness and knowledge of NRM issues and increased participation and involvement in NRM activities. By increasing community capacity and by increasing the involvement of the community more broadly in NRM, the greater the likelihood that the resource condition targets, as identified in the CAP are able to be achieved.

This project provides the basis for benchmarking the existing level of community attitudes, awareness and involvement in natural resource management in the Central West and will form a reference point for ongoing monitoring and evaluation of the CMA's community engagement and capacity building over the life of the CAP¹.

2. OBJECTIVES

The primary objective of this project was to benchmark community awareness, attitudes and beliefs in relation to NRM and the CMA. Although the project provides a basis for developing initiatives within a community engagement context and directions for future marketing of the Central West CMA, the project focuses on social benchmarking and is not an explanatory study which seeks to identify and explain the underlying causes or determinants of community attitudes or beliefs.

The objectives of the project were to:

1. Provide a profile of the various stakeholders in natural resource management in the Central West catchment;
2. To benchmark the Central West community's level of awareness and attitudes to natural resource management issues;
3. To establish the Central West community's current level of involvement in NRM activities;
4. To benchmark the Central West community's level of awareness of the CWCMA; and
5. To establish the most appropriate methods to engage key stakeholders and the wider Central West community in natural resource management and market the CWCMA.

¹ In addition to this report a social atlas of the data presented in this report has also been developed. Fenton, D.M. and Rickert, A. (2007). *Central West Awareness and Attitudes to Natural Resource Management (NRM) Benchmarking Survey: Social Atlas*. Central West Catchment Management Authority, Dubbo, NSW.

3. METHODOLOGY

The project methodology was based on two separate telephone surveys within the Central West region which included (i) residents and (ii) stakeholder organisations.

3.1 Key Informant Interviews

Through consultations with CMA, staff potential key informants were identified who could provide information on NRM issues and assist in the development of questionnaires to be used in the telephone interviews. Fourteen face-to-face key informant interviews were undertaken with CMA staff, Board members and other stakeholders within the Central West region. The information derived from the interviews provided an important framework and grounded approach to the development of specific interview questions for the telephone survey. It also ensured appropriate contextual issues and the language and terminology of NRM within the community and amongst stakeholders was recognised in the development of the survey questions. During the process of questionnaire development all key informants were provided with a draft of the questionnaire and asked to review and comment on the interview questions.

3.2 Questionnaire Design

The questionnaire which was designed for residents was based on issues as identified in the key informant interviews and a review by CMA staff. The questionnaire was designed so that it could be undertaken within 20 minutes and was equally applicable to both rural and urban residents. Furthermore the questionnaire consists primarily of structured and close ended questions, which because they are more quantitative are more suited to a monitoring program where comparisons and trends can be examined across time.

The questionnaire (Appendix A) included questions which focussed on:

- (i) Awareness and knowledge of NRM issues;
- (ii) Involvement and participation in NRM activities;
- (iii) Perception and beliefs about the CW CMA; and
- (iv) Characteristics of respondents.

An initial draft of the questionnaire was pre-tested on a random sample of 40 respondents from within the Central West region. The objective of the pre-test was to ensure question wording and question ordering was appropriate and that the responses to questions were meaningful. On the basis of the pre-test minor changes were made to the wording and structure of the questionnaire.

The questionnaire designed for stakeholder organisations (Appendix B) included many questions used previously in a national monitoring and evaluation survey of regional NRM bodies and stakeholder organisations.² This enabled a comparison to be made between stakeholder organisations in the Central West region with those at a National and State level.

² Fenton, D.M. (2006). *Socio-economic indicators and protocols for the National NRM Monitoring & Evaluation Framework: The social and institutional foundations of NRM*. National Land and Water Resources Audit. Canberra.

3.3 Regional Community: Survey Sampling

The sampling frame consisted of all rural landholders and urban residents in the Central West CMA region. Rural landholders were defined as those respondents who owned, rented or 'looked after' a rural property. Urban residents on the other hand, included residents who did not own, rent or 'look after' a rural property.

On the basis of the project budget, the sample size was maximised so as to include 1,500 telephone interviews with rural landholders and 500 telephone interviews with urban residents. The use of a large sample not only allowed pre and post stratification of the sample, but also ensured there was minimal error when using the survey findings in the context of a longer term monitoring and evaluation framework³.

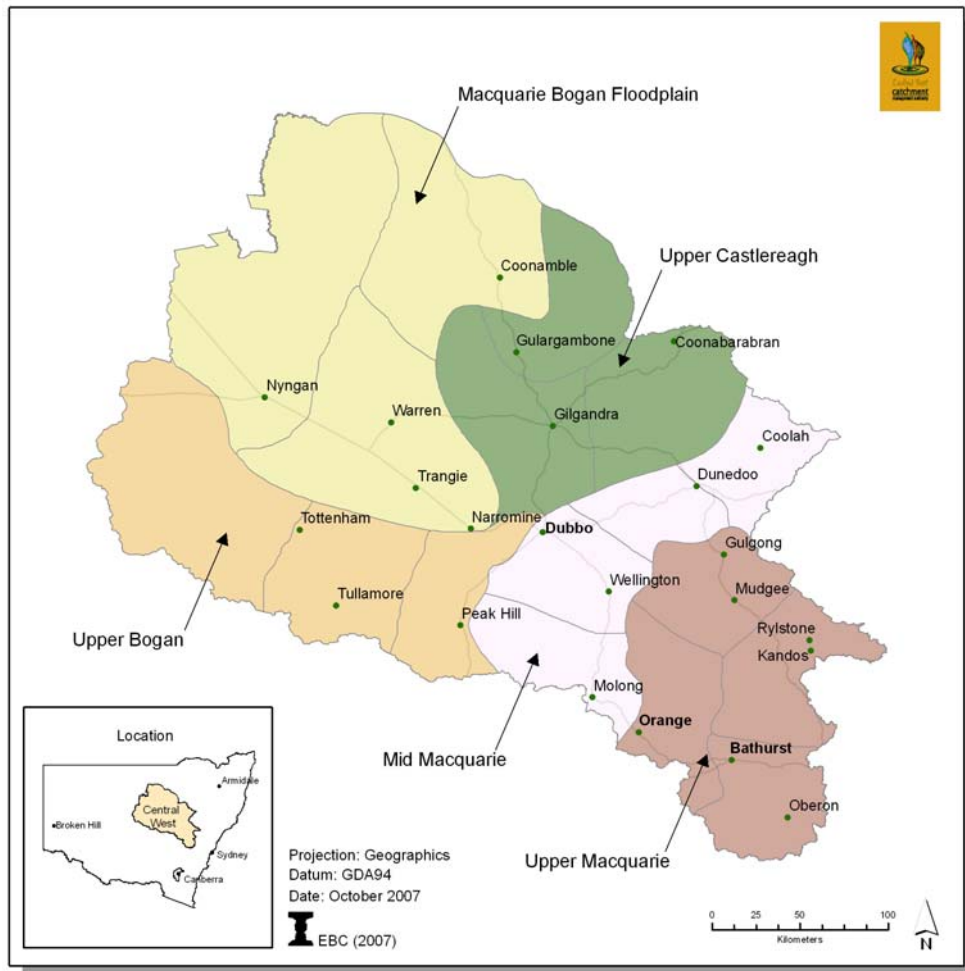
For the sample of rural landholders, an attempt was made to obtain 300 landholders who were geographically dispersed from within each of the five subregions in the Central West region (Figure 1). This was achieved by examining the distribution of telephone numbers as identified in the 2004 digital white pages⁴ and identifying starting and ending ranges for phone numbers which were clearly outside of any towns or urban areas. Using the starting and ending sequence for each block of phone numbers, the phone numbers within these ranges were then systematically sampled until the target quota was reached. In applying this sampling methodology it was found difficult to obtain sufficient phone numbers for the Upper Bogan and to a lesser extent the Upper Macquarie subregions. In contrast, while these subregions were under quota, the Upper Macquarie subregion was over quota.

In the case of urban residents an attempt was made to obtain 100 residents from each of the five subregions using the same sampling procedures for telephone numbers as outlined for rural landholders. In the case of urban residents, the selection of telephone numbers was based on the towns within each of the five subregions.

³ For example, when a 'yes' or 'no' response is required to a specific question and assuming 50% of respondents within a sample of 1,500 responded 'yes' and the remaining 50% responded 'no', this would yield a standard error of 0.013. In other words, if 50% of the sample responded 'yes' to a specific question, we would be 95% confident that the true value in the population from which the sample was drawn would be between 49.0% and 51.0%.

⁴ The 2004 digital white pages telephone directory was the last year a digital directory of all phone numbers in Australia was publicly available.

Figure 1 Subregions within the Central West Region



3.4 Stakeholder Organisations: Survey Sampling

The sampling frame for stakeholder organisations was based on a contact list of 49 stakeholder organisations provided by the Central West CMA. The stakeholder contact list included:

- Community Conservation and environment groups (10)
- Consultants (3)
- Educational organisations (5)
- Government departments and agencies (8)
- Industry organisations and groups (11)
- Landcare (7)
- Local Government (5)

3.5 Resident Community: Survey Implementation

A week prior to the implementation of the survey, an advertisement outlining the project and survey was included in local newspapers that were distributed in the region (Appendix C). The advertisement notified residents that the survey was to be undertaken and provided a web address through which they could access additional information. The text included on the web page is presented in Appendix D. In addition, throughout the implementation of the survey the consultant and CMA staff made several radio presentations which described the objectives of the survey and how the results would be used.

The regional community survey of residents was administered through a team of 15 interviewers between the 2nd of June 2007 and the 6th of August 2007. The survey was based on interviews with those respondents aged over 18 years of age. Three call backs were made to unanswered telephone numbers prior to the telephone number being replaced in the sequence.

The wording used to introduce the survey is shown below:

“Hello, my name is.... We are undertaking a survey of the community in the region, which you may have seen advertised in the local newspaper. The survey is for the Central West Catchment Management Authority or CMA. The survey is being undertaken so the CMA can better identify the important environmental and natural resource management issues in the area.

All the information you provide is confidential and we do not require your name. Would you have some time for me to ask you some questions? It will only take about 20 minutes.”

Interviewers were instructed to also inform respondents if requested that telephone numbers had been randomly selected from an existing database of telephone numbers and that further information about the project was available on the project website.

3.6 Stakeholder Organisations: Survey Implementation

Interviews with stakeholder organisations were undertaken by a single interviewer and completed over a four week period from the 30th of July to the 27th of August 2007. An introductory letter outlining the project was sent to stakeholder organisations by the CMA approximately one week prior to the interview (Appendix E). Where possible, the questionnaire was also emailed or faxed to the contact person within the organisation prior to the interview taking place.

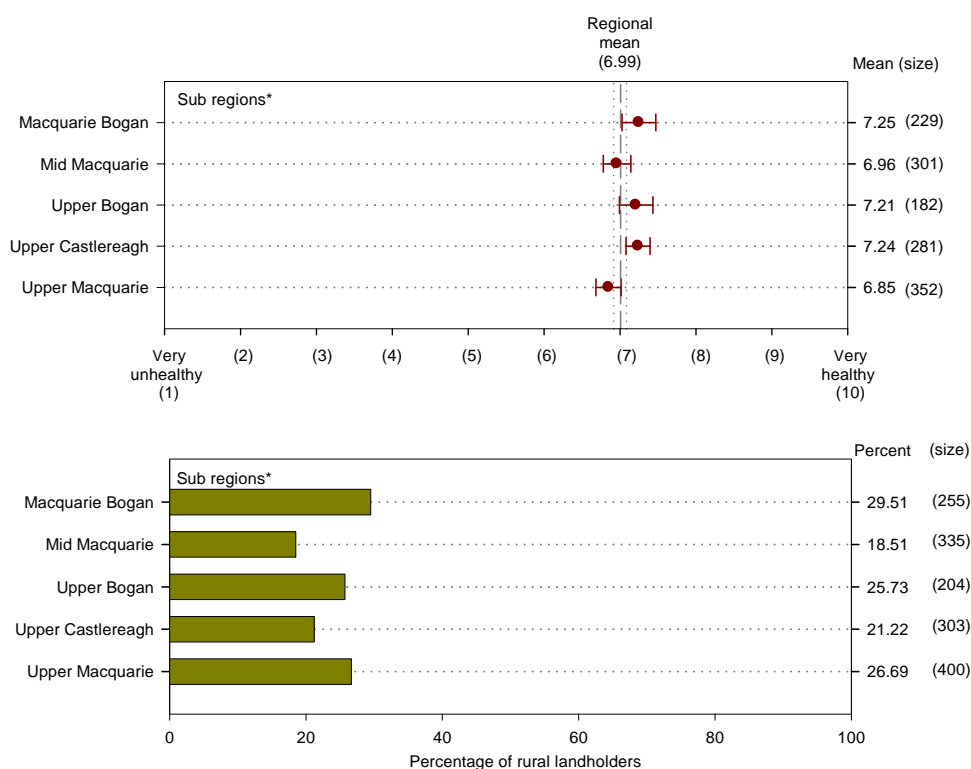
4. INTERPRETATION OF GRAPHS

Figure 6 shows examples of the two type of graphs used in the report in presenting the results of analyses.

The first graph in Figure 6 shows the presentation of results in relation to mean scores. In this example the mean scores for each of the five subregions are symbolised as a ‘dot’, with the upper and lower whiskers on either side of the mean indicating the 95% confidence interval. The graph also shows the mean for the CMA region. On the right axis of this graph the exact mean scores are presented and the sample size on which the mean was based. Sample sizes will vary as some questions were not applicable to all respondents, while in other instances the respondent may have indicated they were unable or did not wish to answer the question. As a guide to interpretation, an asterisks (*) is also used against the Y axis heading to indicate that the means were found to be significantly different using an analysis of variance test.

A similar interpretation can be used to understand the information presented in the second graph in Figure 6. However in this case rather than mean scores being presented the results are based on the percentage of respondents from within each subregion.

Figure 2 Examples of graphics used in reporting analyses



In each of the graphics presented in this report, the variable of interest is compared against a number of other explanatory variables in order to further identify important relationships in the data. The range of explanatory variables used in the analysis is explained below:

Subregions: This distinguishes between the five subregions within the Central West CMA. Respondents were assigned to each subregion on the basis of (i) the nearest town to which they lived (Question 35); (ii) the distance to the nearest town (Question 39) and (iii) the nearest road intersection to their property (Question 40).

Urban residents: Urban residents included all those respondents who lived in a town or urban area and who did not own, rent or 'look after' a rural property. On the basis of the towns and urban areas in which respondents lived they were aggregated into one of the five subregions.

Respondent type: This simply provides a comparison of the responses of urban and rural respondents.

Property size: All rural landholders were asked to indicate the size of their property in either acres or hectares. On the basis of responses to this question, five property size classes were defined from less than 10 hectares to greater than 801 hectares. In general when interpreting this variable against the variable of interest, increasing or decreasing linear trends are sought.

Participation in NRM: This distinguishes between those respondents who in that last two years participated and did not participate in organised meetings and activities about environmental issues or the management of natural resources in their local area.

Awareness of NRM issues: All respondents were asked to identify their ability to identify environmental issues in their local area on a scale from one (no ability) to 10 (being able to identify all the issues). On the basis of responses to this question, respondents were grouped into four response categories from low to high.

Age of respondents: On the basis of the respondents age seven age classes were defined. When interpreting this variable against the variable of interest, increasing or decreasing linear trends are sought.

As indicated previously, it is important to recognise that this report provides benchmarking information against which community attitudes and beliefs can be monitored across time. The analyses and graphics are presented in such a way as to allow future assessments against this benchmarked information to occur. In terms of the direct interpretation of the current findings, it is generally only those stakeholders and CMA staff with detailed local knowledge who will be able to provide the contextual explanations for many of the findings reported in the following graphics.

5. SAMPLE CHARACTERISTICS

The final sample consisted of 1,500 rural landholders and 500 urban residents. The sample was stratified geographically on the basis of subregions and also on the basis of urban and rural respondents. Stratification ensured that the sample size was of sufficient size within these strata to permit specific analyses to be undertaken. However, while this was a benefit of the stratification, the total sample was distributed in such a way that the proportion of respondents from within each of the five subregions and the proportion of urban and rural respondents were not the same as that found in the population of the Central West region. For example, 75% of the total sample consists of rural landholders and only 25% are urban residents. The true percentage of rural and urban residents in the population is most likely to very different from these sample percentages and as such sample weights had to be applied so as to ensure the sample proportions were adjusted to the correct population proportions.

5.1 Sample Weights

The weighting of samples has been undertaken so as to ensure that the analyses are correct in relation to the relative weight of urban and rural residents in the population and correct in relation to the relative weight of urban and rural residents from the different subregions. The samples have been weighted using information from the 2006 census, with the population of rural landholders being based on the number of occupied private dwellings in census collector districts (CCDs) outside of urban centres and localities. The population of urban residents on the other hand, was based on the number of occupied private dwellings in CCDs within urban centres and localities.

Five sample weights were defined and applied depending on the analysis being undertaken.

Rural within subregion weight: This applies only to the sample of rural landholders *within each subregion*. Within each of the five subregions the sampling procedures tried to ensure a uniform spatial distribution of respondents so as to enable later GIS mapping of responses. Using ABS census data, the sample of rural landholders within each subregion has been weighted so as to ensure the spatial distribution of landholders within each subregion is correct relative to the population of landholders found within the subregion.

Rural regional weight: This applies only to the sample of rural landholders from *within the Central West region*. The weights have been applied so as to adjust the sample distribution of landholders within and between subregions. Statistics based on all landholders within the region will be in correct proportion to the number of landholders found within and between subregions.

Urban within subregion weight: This applies only to the sample of urban residents *within each subregion*. Within each of the five subregions the sample was weighted so as to ensure the correct distribution of urban residents within each subregion.

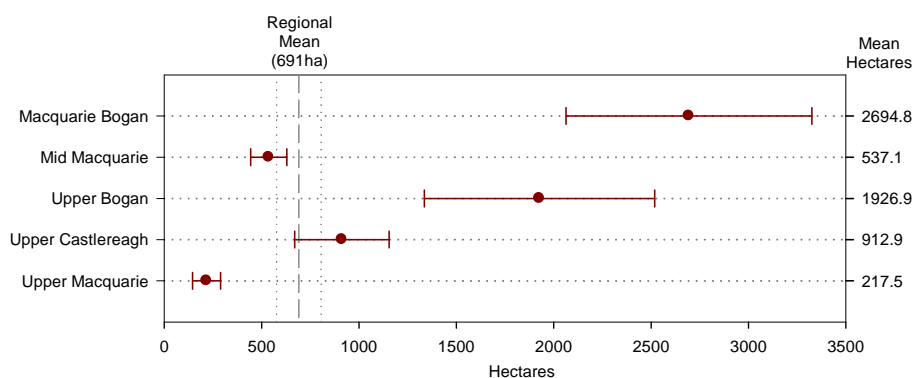
Urban regional weight: This applies only to the sample of urban residents from *within the Central West region*. The weights have been applied so as to adjust the sample distribution of urban residents within and between subregions. Statistics based on all urban residents within the region will be in correct proportion to the number of urban residents found within and between subregions.

Total regional weight: This applies to the total sample and ensures that the proportion and distribution of rural and urban residents in the final sample is correct.

5.2 Size of Rural Properties

Figure 2 shows the average size of rural properties in the Central West region to be 691 hectares. There is however considerable variation across the region, with the average property size in the Macquarie Bogan subregion being 2,695 hectares, while in the Upper Macquarie subregion it is 218 hectares.

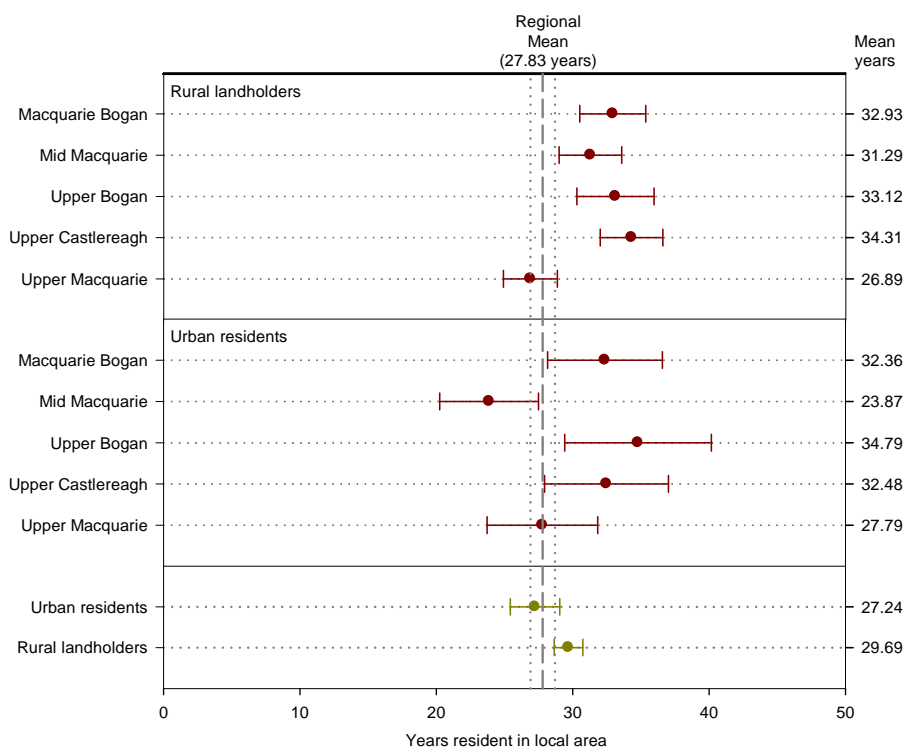
Figure 3 Size of rural properties (hectares)



5.3 Years Lived in the Local Area

Across both rural landholders and urban residents with the Central West region, residents had lived within their local area for approximately 27 years (Figure 3). As shown in Figure 3, rural residents in the Upper Macquarie subregion had lived in the local area far less than rural residents in other subregions.

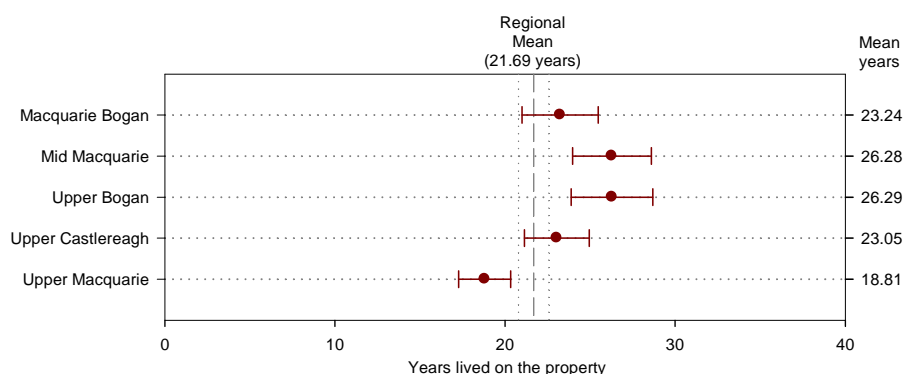
Figure 4 Years lived in the local area (rural landholders and urban residents)



5.4 Years Lived on the Current Property

Figure 4 shows the mean number of years landholders had lived on their property. Again the Upper Macquarie subregion comprises a distinct group of landholders, who not only live on relatively small rural properties (Figure 2), but who also in relative terms, have lived on their properties for less time than landholders in other subregions.

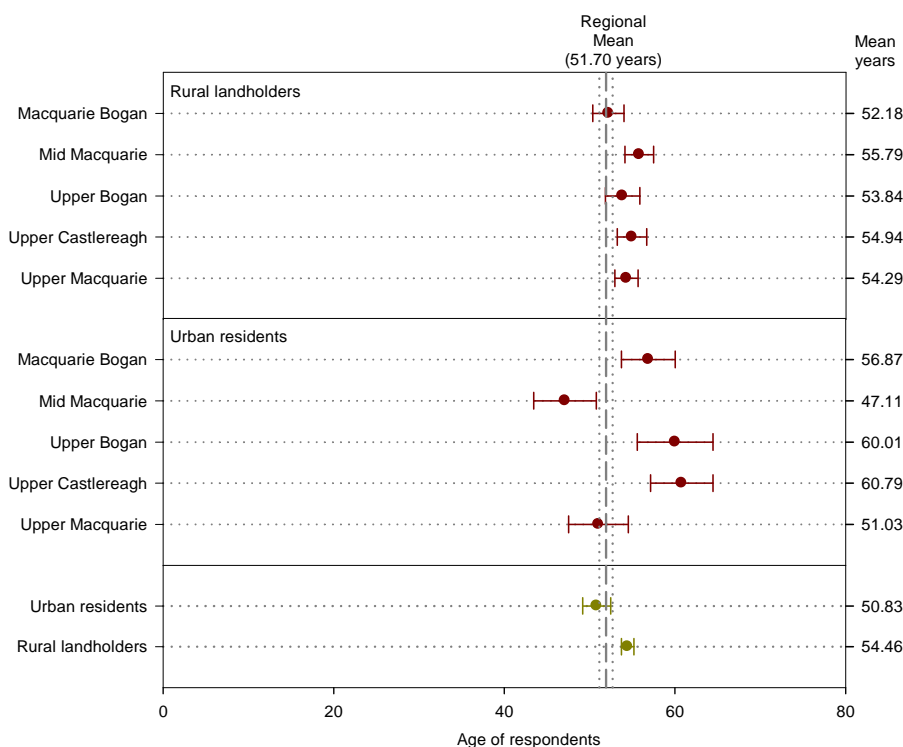
Figure 5 Years lived on the current property (rural landholders)



5.5 Age of Respondents

The mean age of respondents in the sample was 52 years (the sample excluded all those respondents less than 17 years of age). While there was little difference in the age of rural landholders across subregions, amongst urban residents those in the Upper Bogan and Upper Castlereagh had mean ages of above sixty (Figure 5).

Figure 6 Age of all survey respondents



6. NATURAL RESOURCE MANAGEMENT ISSUES

In the assessment of community beliefs and attitudes about NRM, there were three core areas of focus which included (i) beliefs about the health of the environment; (ii) the awareness of environmental issues; and (iii) beliefs about environmental issues including water efficiency and use, native vegetation and biodiversity and attitudes towards farming practices.

It is suggested that judgments by landholders about the health of properties and the reporting and identification of environmental issues on properties, while undertaken in the context of a social benchmarking project, may also be used as a useful adjunct to the biophysical monitoring of changes in the condition of the environment within the region.

6.1 Rural Properties: Environmental Health

All landholders were asked to judge the health of the land and water on their property on a 10 point scale, with one being very unhealthy and ten being very healthy. Figure 7 shows the regional mean to be approximately seven, with the Mid Macquarie and Upper Macquarie subregions being judged the least healthy. While there was no difference in health across different property sizes, the more aware the landholder was of environmental issues, the healthier they were likely to judge their property. In addition, there was a trend towards older landholders judging their property as being healthier than younger landholders.

Landholders were also asked to respond to the same question again, but consider how they may have responded 10 years ago (Figure 8). Although responses to this question are based on fewer landholders, given that many were not on their property 10 years ago, a similar pattern again emerges with older landholders judging their property to be healthier 10 years ago when compared to younger landholders.

A comparison of the health of rural properties now and 10 years ago shows there to be a significant difference in regional means for the health of properties (Figure 9). Properties are considered to be healthier now when compared to 10 years ago. This was the case in all subregions with the exception of the Macquarie Bogan, where there was no change in the health of properties between now and 10 years ago.

Figure 9 also indicates that it is the larger properties where there has been the greatest improvement in environmental health over the last 10 years.

Figure 7 “If you were to judge the health of the land and water on your property, on a scale from one (1) to ten (10) with one (1) being very unhealthy and ten (10) being very healthy, what score would you give it?” (Landholders only)

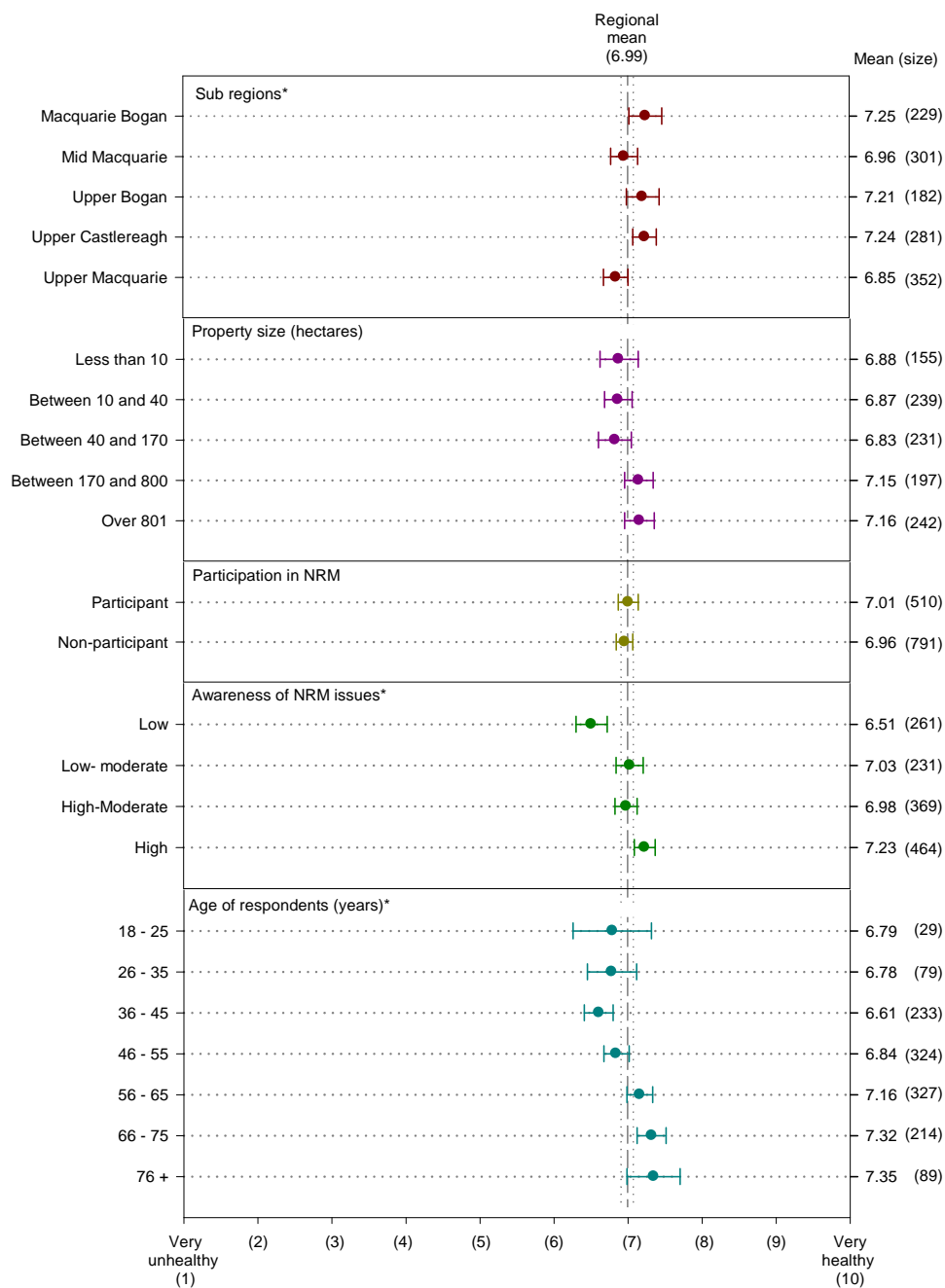


Figure 8 “Thinking back 10 years, and again on a scale from one (1) to ten (10) how would you have judged the health of your property then?” (Landholders only)

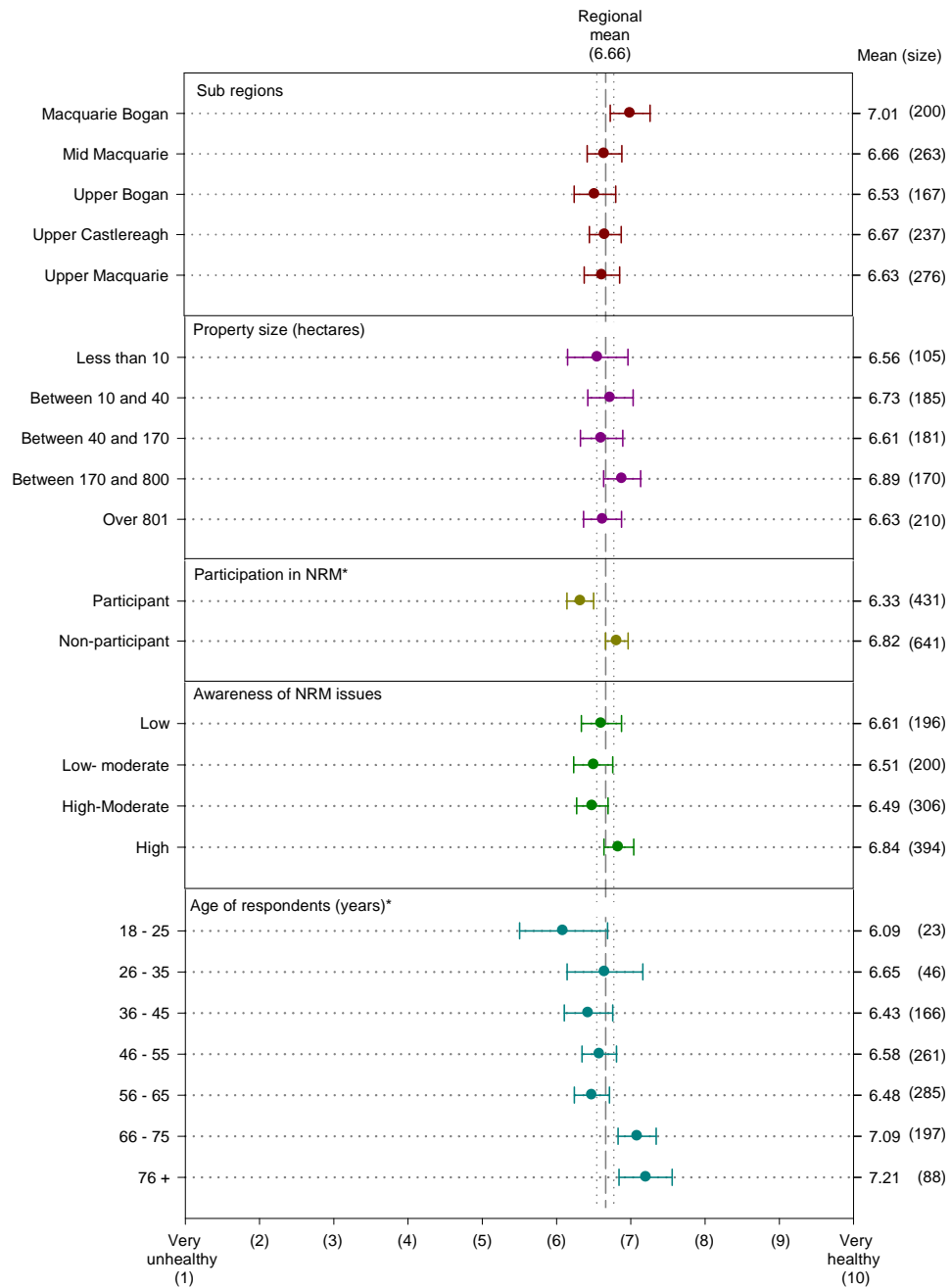
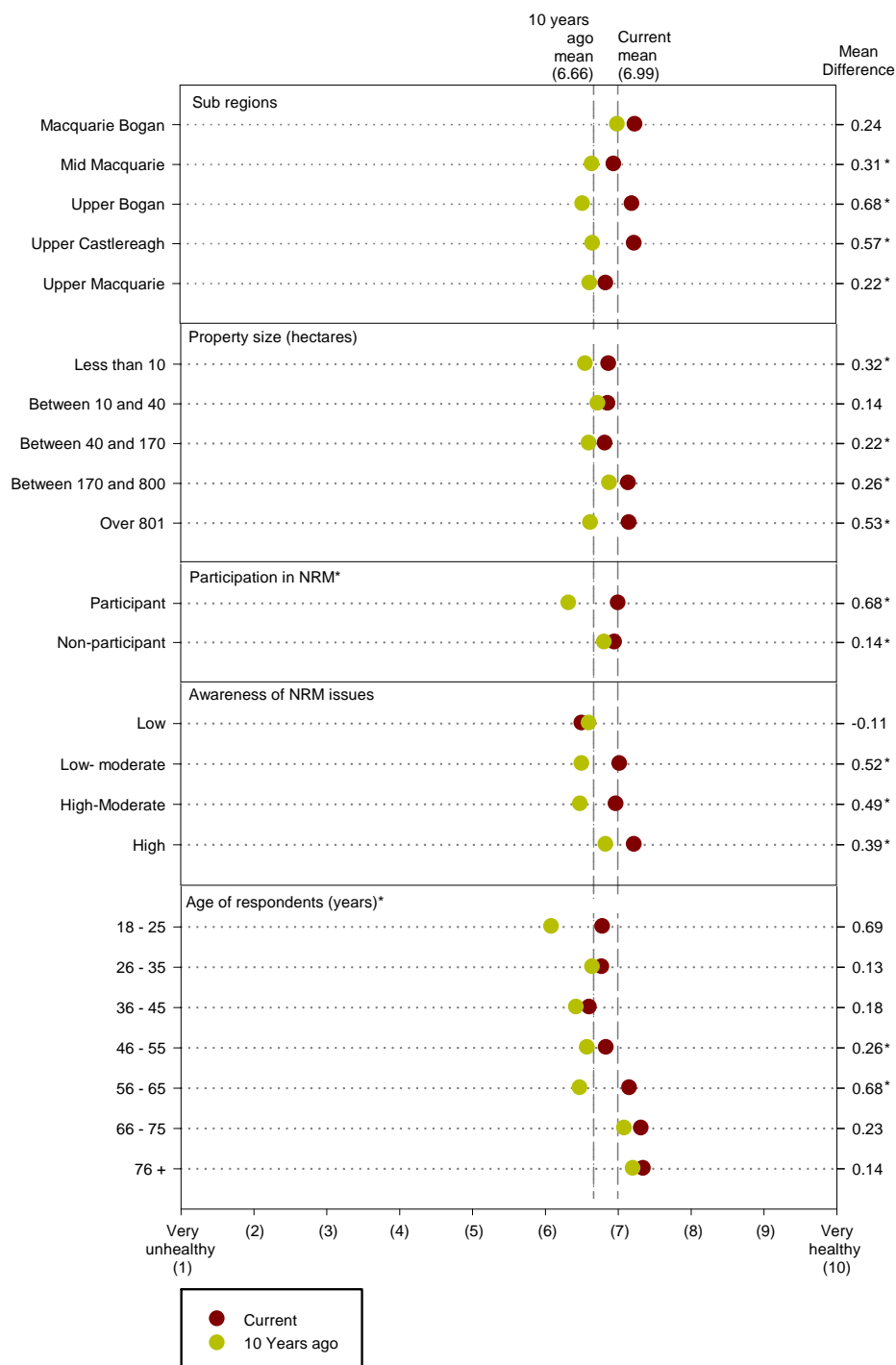


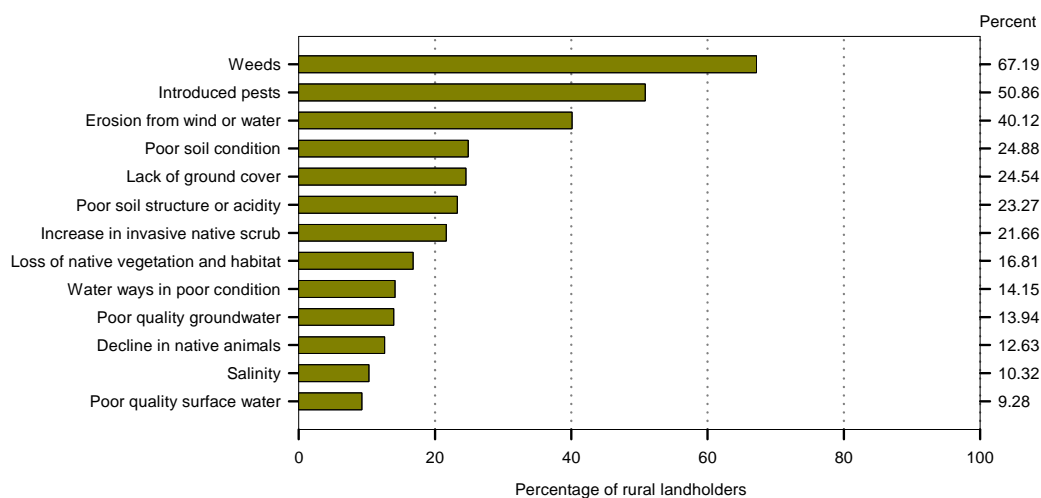
Figure 9 A comparison of beliefs about the health of rural properties now and 10 years ago
(Landholders only)



6.2 Rural Properties: Environmental Issues

All landholders were asked to identify ‘possible’ environmental problems that they had on their land. Figure 10 shows that across the Central West region, the three most commonly reported problems were weeds (67%); introduced pests (51%) and erosion from wind and water (40%).

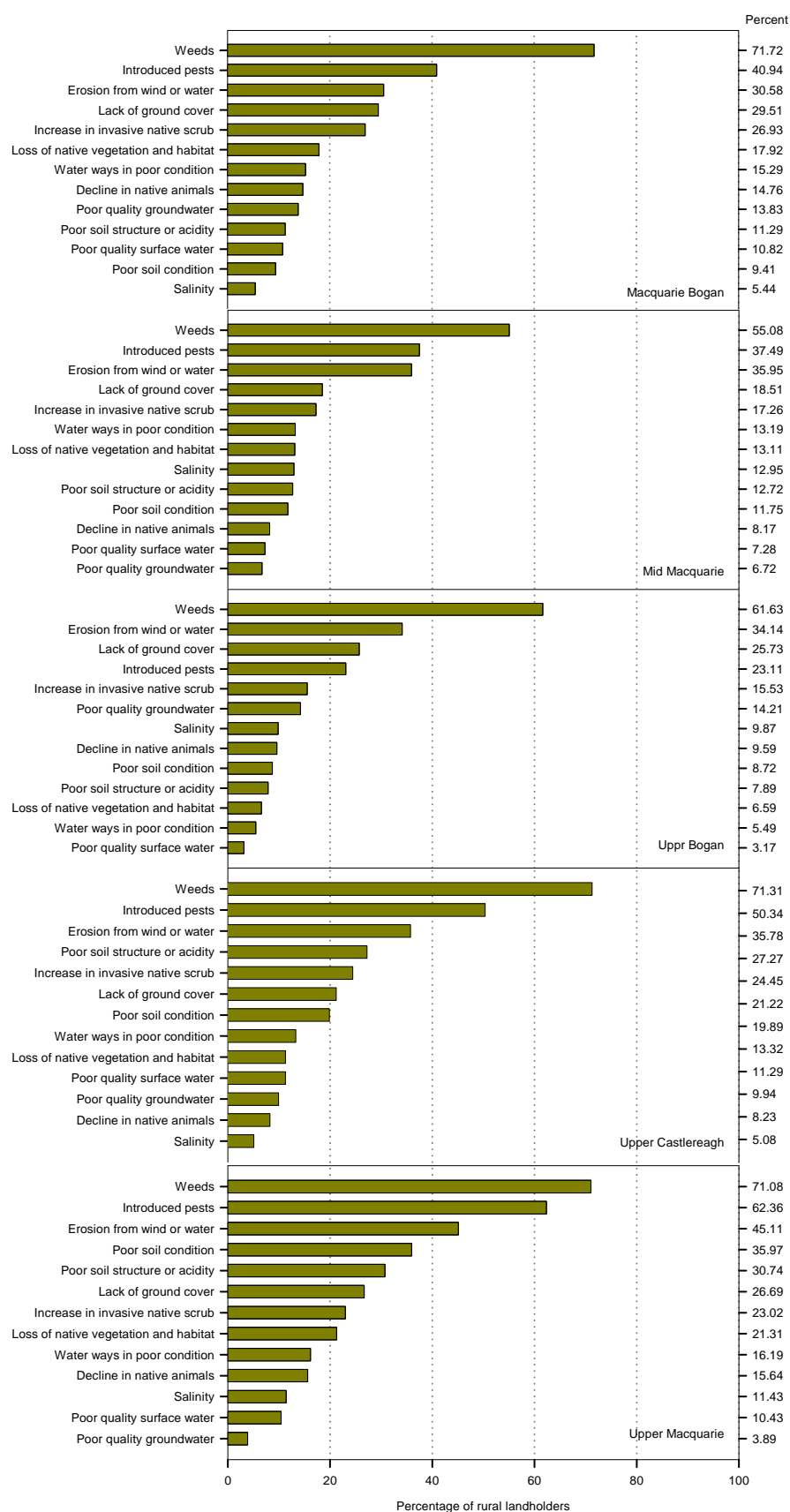
Figure 10 “I am going to read out a list of possible problems people have on their land. As I read out the list could you tell me if it occurs on your land?” (Central West region)



Note: In responding to this question a respondent may have had multiple responses. As a respondent may appear in more than one row of the graph and as such the row percentages should not be summed.

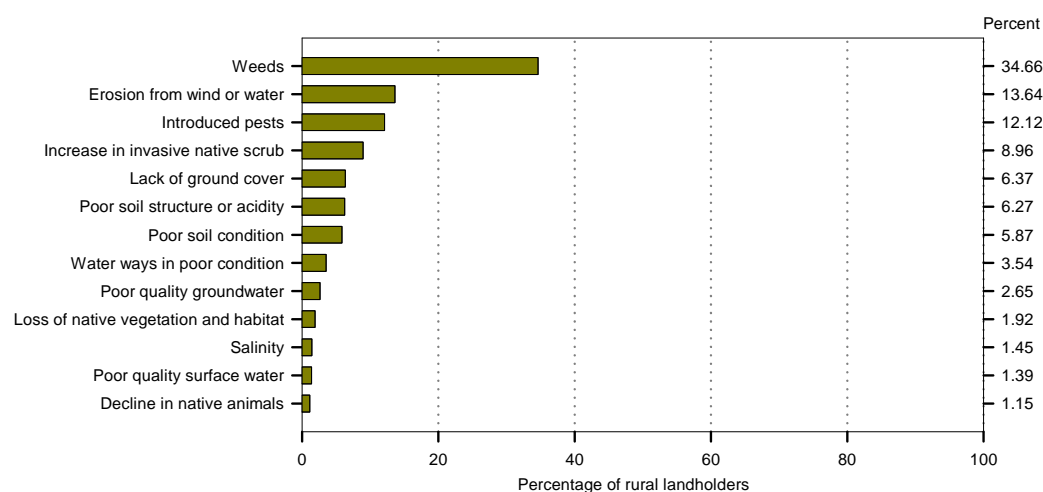
Figure 11 shows the most commonly reported environmental issues on properties within each of the five sub regions. With the exception of the Upper Bogan subregion, weeds, introduced pests and erosion are the three most common problems. In the Upper Bogan, the lack of ground cover is also a common issue on many properties.

Figure 11 “I am going to read out a list of possible problems people have on their land. As I read out the list could you tell me if it occurs on your land?”



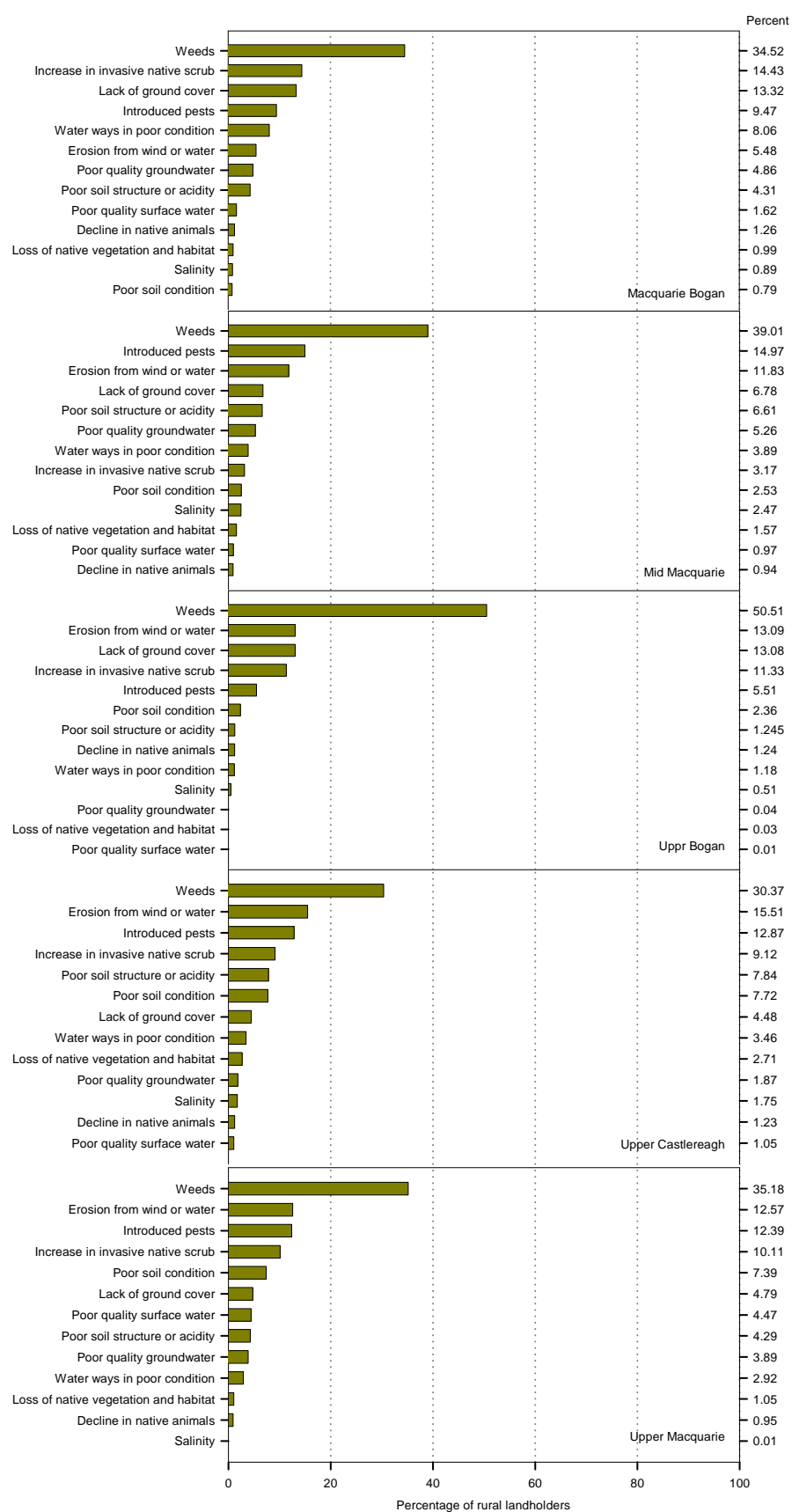
After respondents had identified the environmental issues of concern to them, they were also asked to identify which of the issues they had identified was the most important issue that needed to be addressed. Figure 12 indicates that not only were weeds, introduced pests and erosion the most commonly reported environmental issues on properties, but they were also considered to be the three most important issues that needed to be addressed. Figure 12 also shows that while a third of all landholders in the Central West region indicated weeds as being the most important issue to be addressed, less than 2% of landholders indicated loss of native vegetation and habitat, salinity, poor quality surface water and a decline in native animals to be important issues on their properties.

Figure 12 “You have identified [from Figure 10] as issues. Which of these do you think is the most important issue that needs to be addressed?” (Central West region)



Although weeds, introduced pest and erosion were identified as the three most important environmental issues on properties at a regional scale, within each of the subregions some variation was evident in the important of environmental issues on properties. Figure 13 shows, for instance that in the Macquarie Bogan the three most important issues are weeds, an increase in invasive native scrub and the lack of ground cover. Similarly in the Upper Bogan, the lack of ground cover also becomes one of the three most important environmental issues on properties.

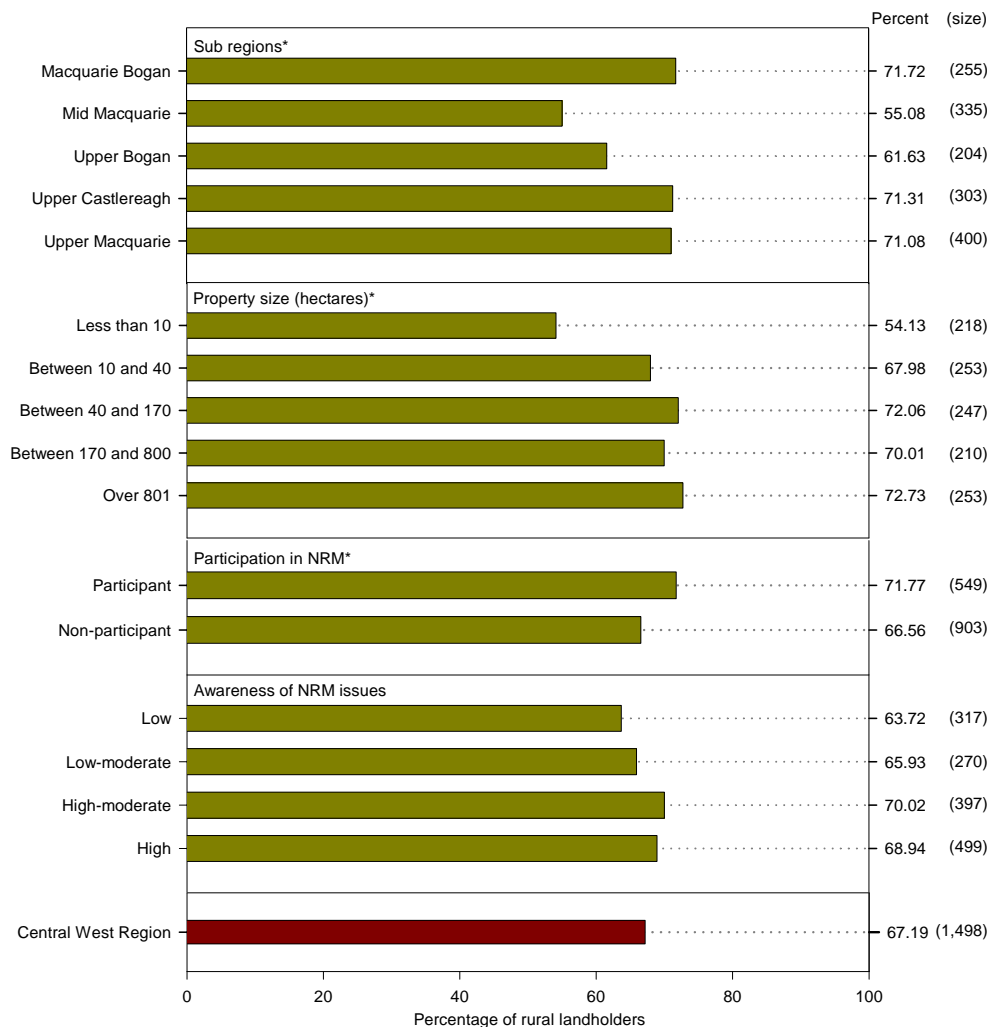
Figure 13 “You have identified [from Figure 10] as issues. Which of these do you think is the most important issue that needs to be addressed?”



6.2.1 Weeds

Within the Central West region, 67% of landholders identified weeds as an important environmental issue on their property (Figure 14). Weeds as an issue appeared to relatively more common in the Macquarie Bogan, Upper Castlereagh and Upper Macquarie subregions and on larger as compared to smaller properties. When asked about the causes of weeds on properties, the two most significant causes identified by landholders was the lack of weed control (51%) and the drought or lack of rain (44%).

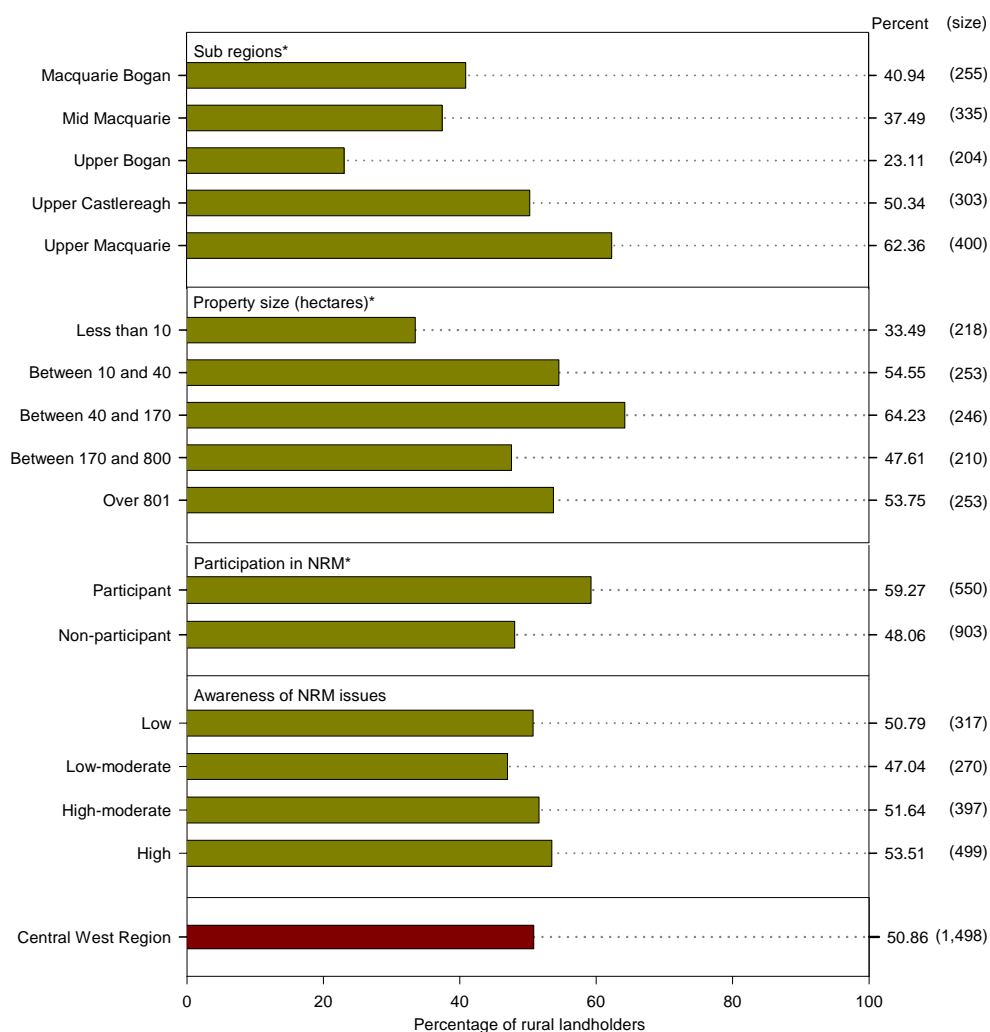
Figure 14 Weeds: Beliefs about occurrence on rural properties



6.2.2 Introduced Pest Animals

Fifty-one percent of landholders identified pest animals as an environmental issue on their property (Figure 15). Pest animals appeared to be more of a problem on larger properties and amongst those properties in the Upper Castlereagh (50%) and Upper Macquarie (62%) subregions. When asked about the cause of this issue, the two most common beliefs about the increase in pest animals was the lack of adequate fencing (25%) and the drought (13%).

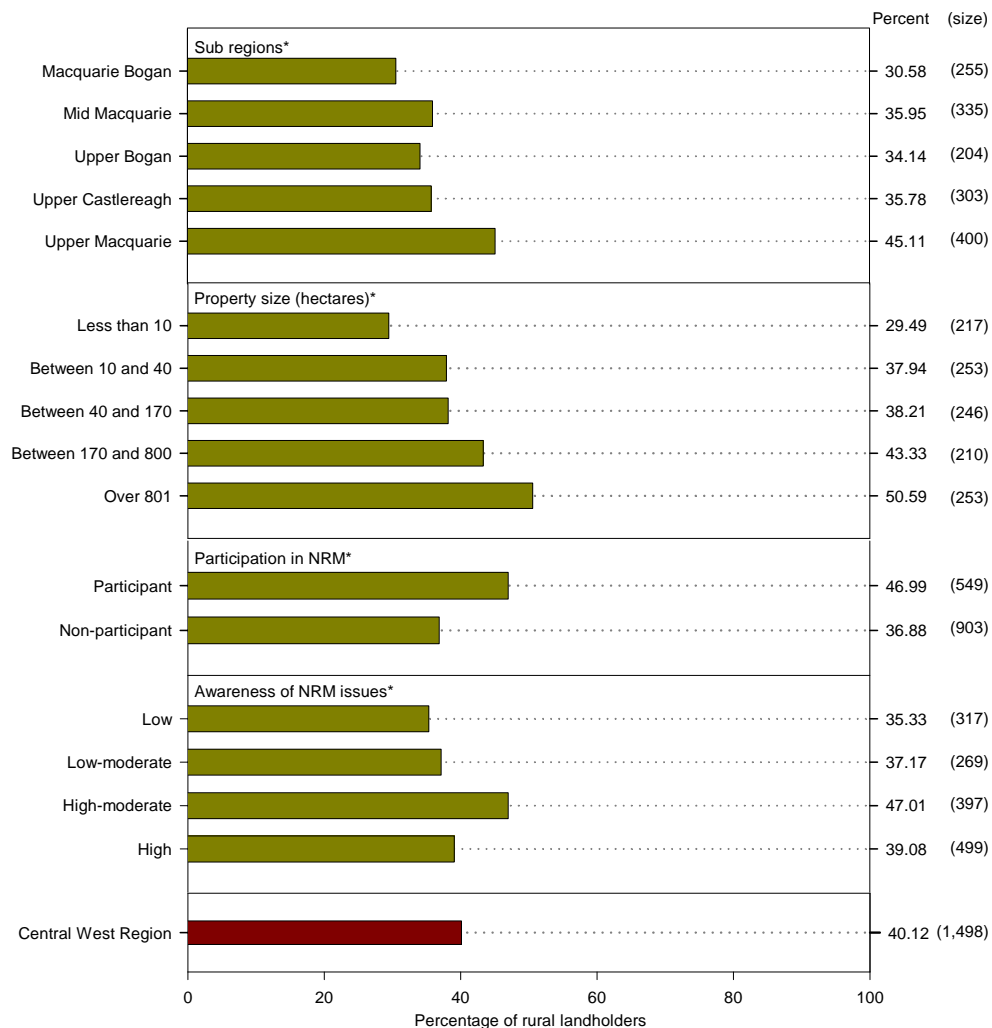
Figure 15 Introduced pest animals: Beliefs about occurrence on rural properties



6.2.3 Erosion from Wind or Water

Figure 16 shows that 40% of landholders in the Central West region indicated that erosion from either wind or water was an issue on their property. A greater frequency of landholders reported erosion as an environmental issue in the Upper Macquarie subregion. Furthermore there was a clear trend as shown in Figure 16 for this to be an issue amongst larger properties. In relation to the causes of erosion on their properties, 45% of landholders believed that the erosion evident on their properties was caused by the drought or lack of rain. A further 8% of landholders indicated the erosion to be due to overgrazing.

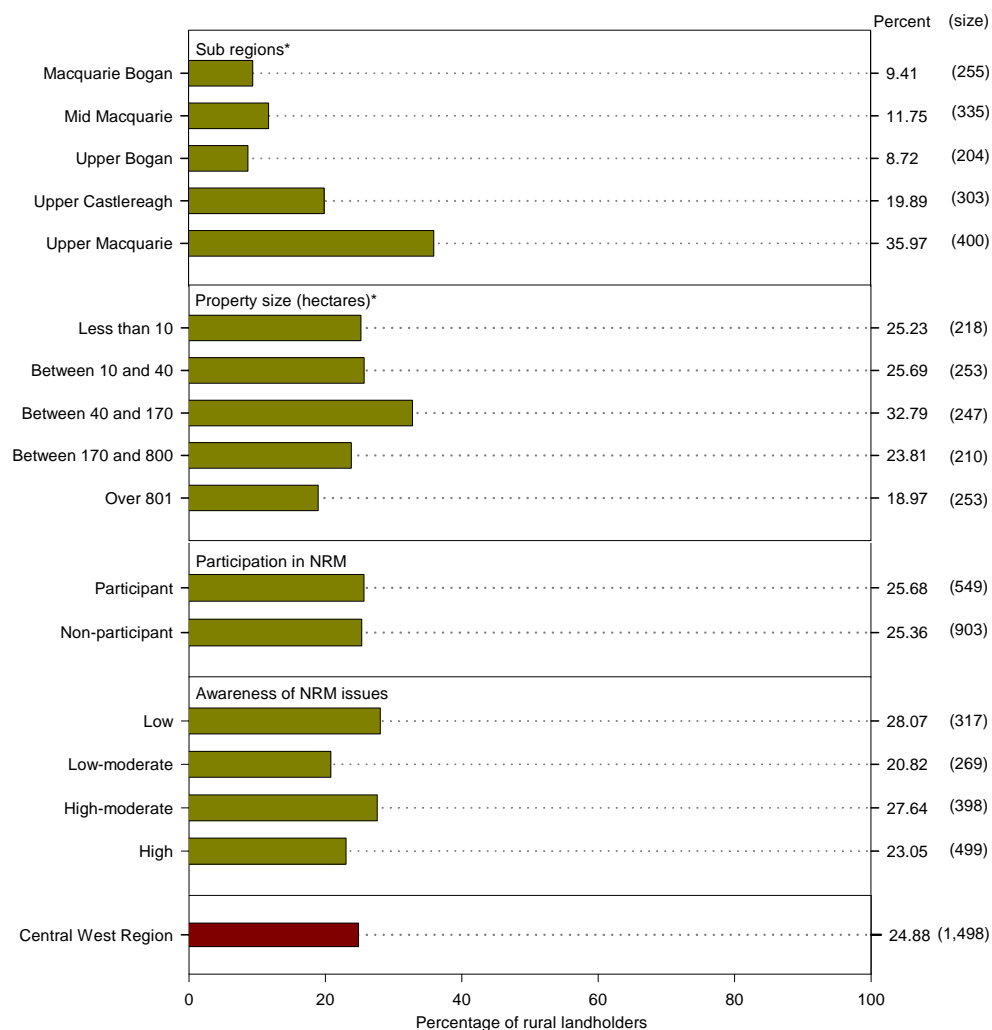
Figure 16 Erosion from wind or water: Beliefs about occurrence on rural properties



6.2.4 Poor Soil Condition

Poor soil condition was reported as an environmental issue on properties by 25% of landholders in the region. However, as is evident in Figure 17, this issue varied significantly across the five subregions with only 9% of landholders reporting this issue in the Macquarie Bogan and 36% of landholders reporting it as an issue in the Upper Macquarie. There was also an indication that the occurrence of poor soil condition appears to be more common amongst landholders on properties between 40 and 170 hectares. Although 29% of landholders indicated they could not identify the cause of poor soil conditions on their property, 48% indicated it was due to drought conditions or the lack of rain.

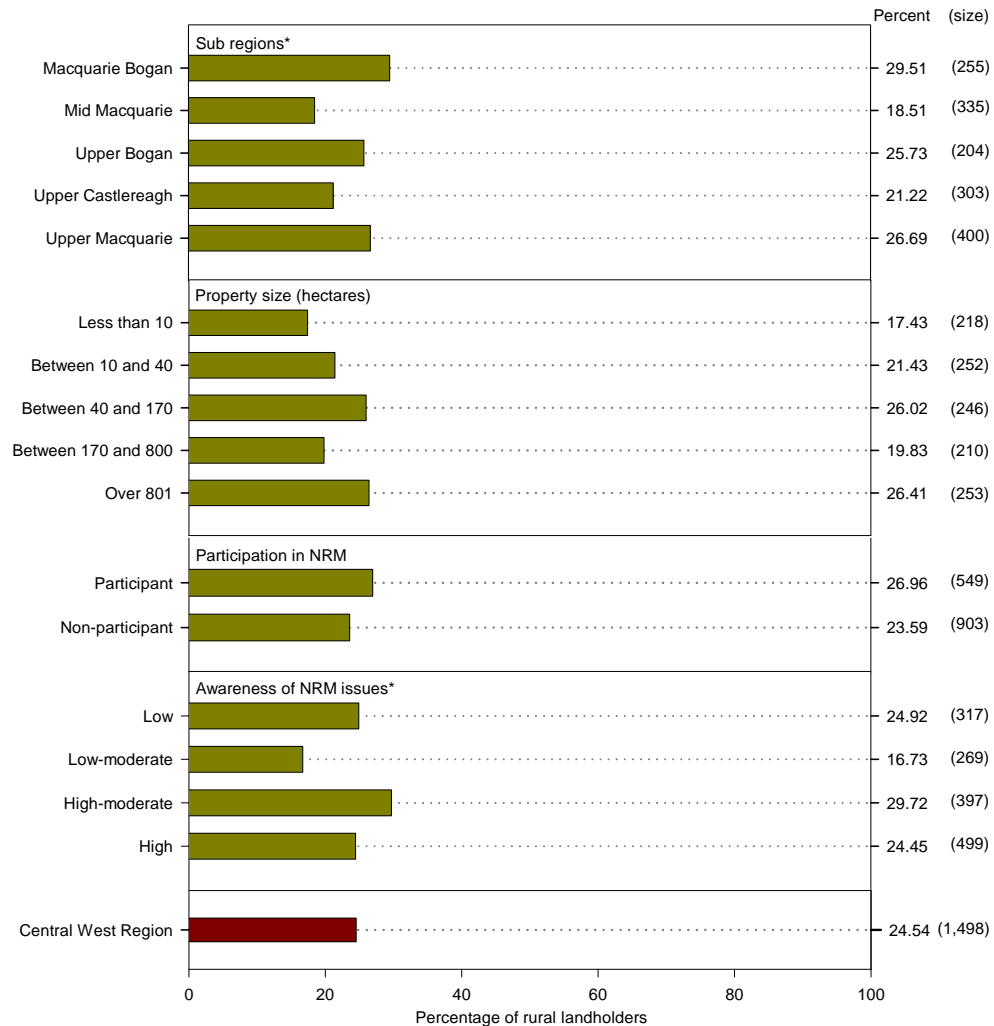
Figure 17 Poor soil condition: Beliefs about occurrence on rural properties



6.2.5 Lack of Ground Cover

Although 25% of landholders reported the lack of ground cover as an environmental issue on their property, 89% of these landholders also indicated the lack of ground cover was due primarily to the drought conditions (Figure 18).

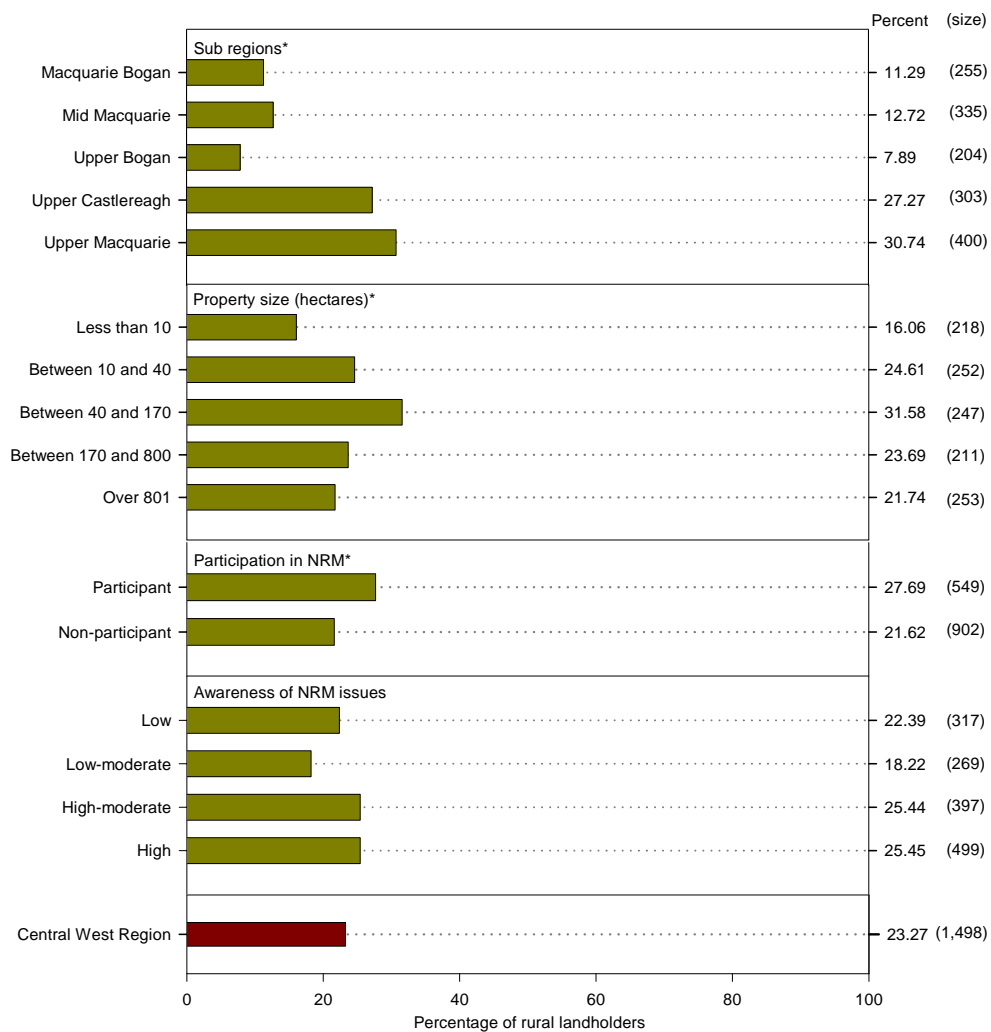
Figure 18 Lack of ground cover: Beliefs about occurrence on rural properties



6.2.6 Poor Soil Structure or Acidity

The occurrence of poor soil structure and acidity on properties to some extent mirrored the findings as reported in relation to poor soil condition (Figure 19). Poor soil structure and acidity was reported more frequently amongst landholders within the Upper Castlereagh and Upper Macquarie subregions. As shown in Figure 19, it appeared to be an issue more commonly found on properties of between 40 and 170 hectares.

Figure 19 Poor soil structure or acidity: Beliefs about occurrence on rural properties

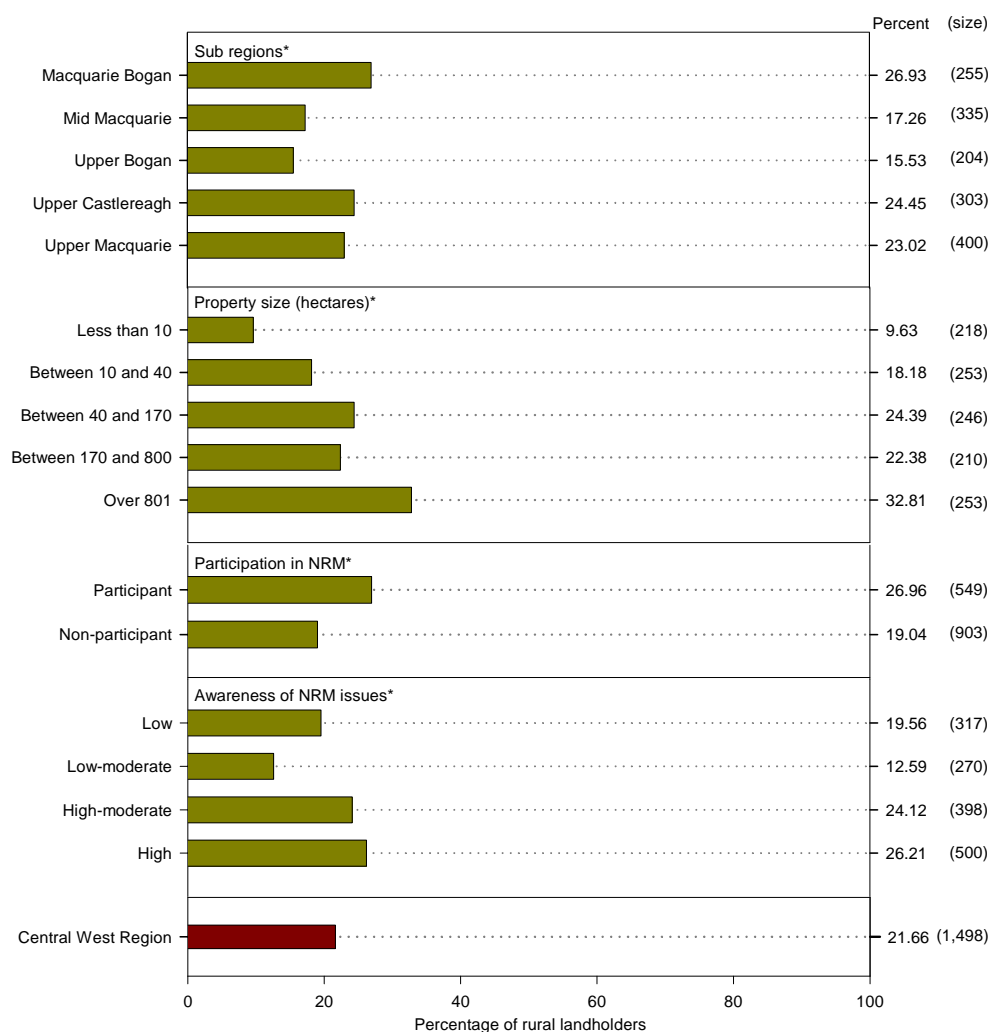


6.2.7 An Increase in Invasive Native Scrub

Twenty-two percent of landholders reported invasive native scrub (INS) as an issue on their properties. This issue appeared to be most common in the Macquarie Bogan, Upper Castlereagh and Upper Macquarie subregions and particularly amongst larger rather than smaller landholders (Figure 20). As also shown in Figure 20, those landholders who had participated in NRM activities and who reported they were more aware of NRM issues were also more likely to report INS as an issue on their properties.

Landholders attributed the increase in invasive native scrub to three primary causes, which included Government regulations (29%); the drought (18%) and the lack of weed control (14%).

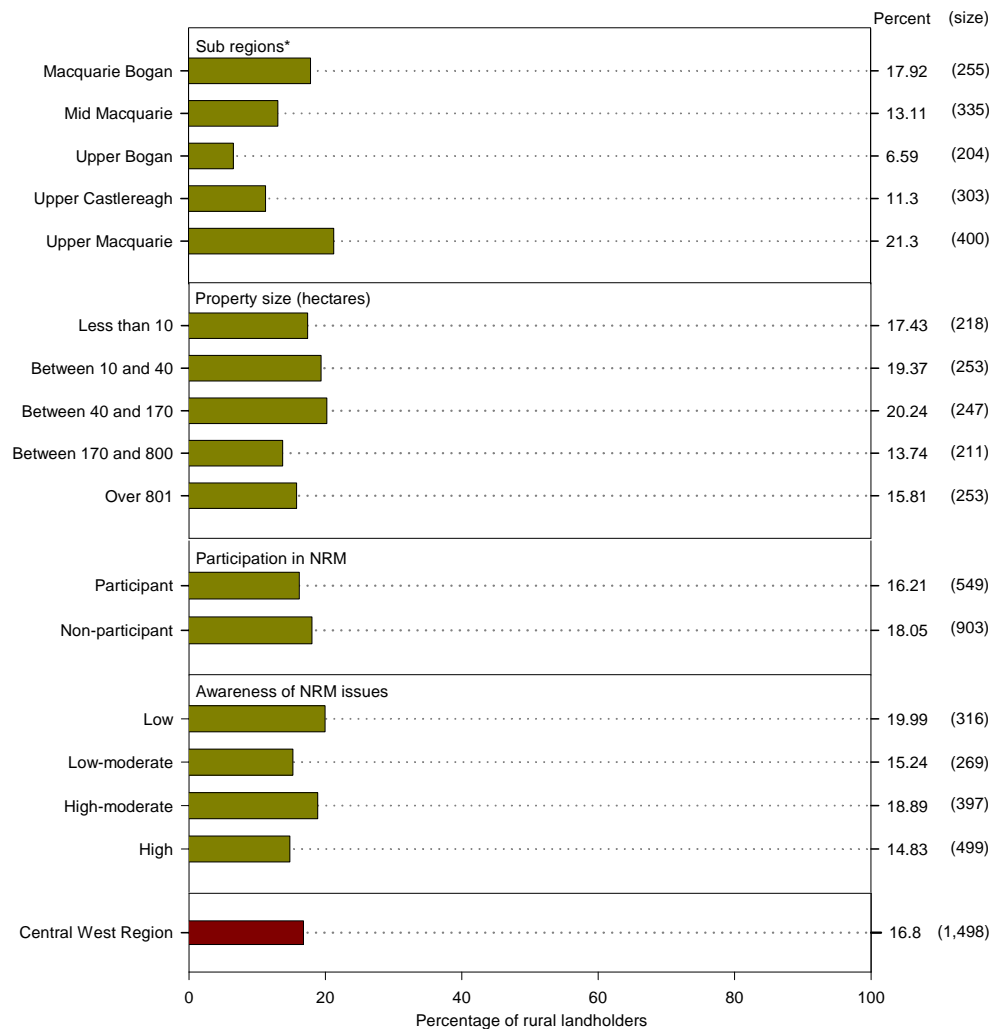
Figure 20 Invasive native scrub: Beliefs about occurrence on rural properties



6.2.8 Loss of Native Vegetation and Habitat

The loss of native vegetation and habitat was reported as an issue amongst 17% of landholders in the region. As shown in Figure 21, it was clearly less of an issue in the Upper Bogan and more of an issue in the Macquarie Bogan and Upper Macquarie subregions.

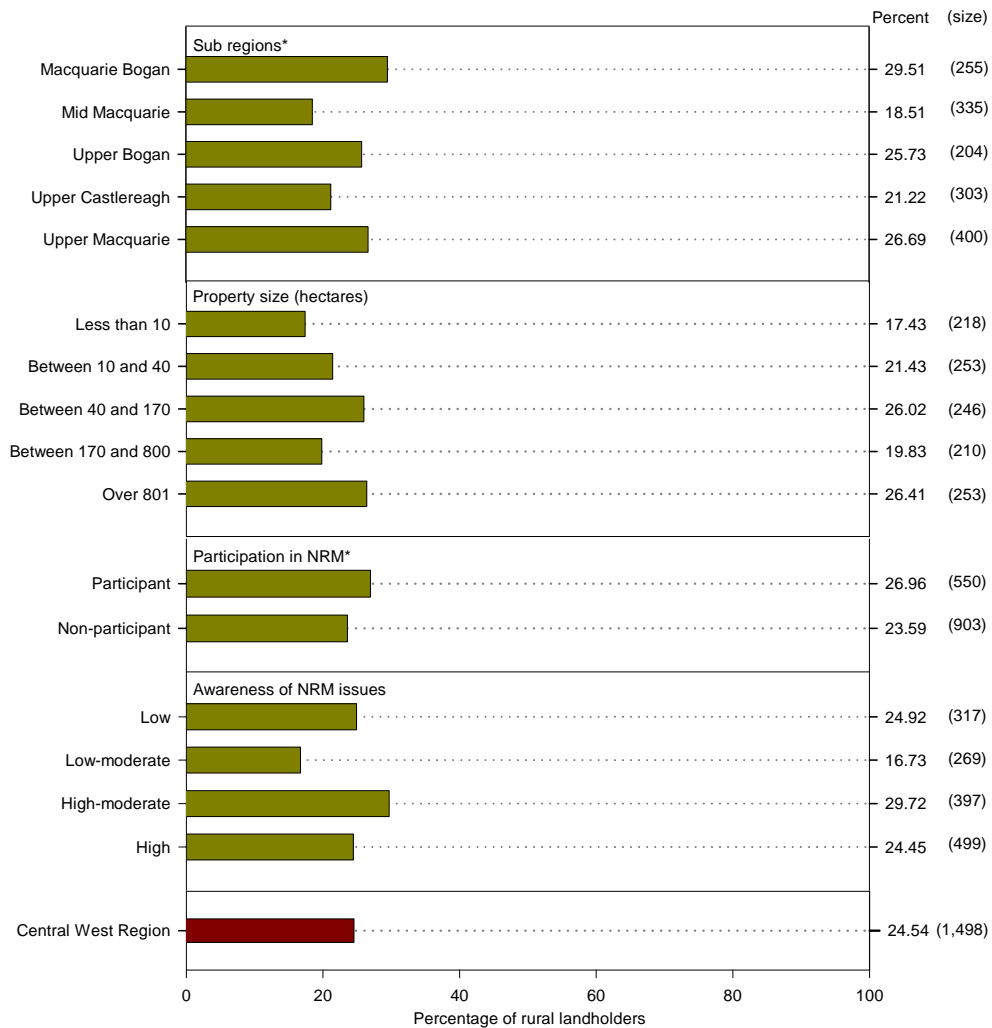
Figure 21 Loss of native vegetation and habitat: Beliefs about occurrence on rural properties



6.2.9 Condition of Waterways

Twenty-five percent of landholders reported the condition of waterways to be an issue on their properties (Figure 22). Landholders attributed the poor condition of waterways to three primary causes, which included the drought (62%); Government regulations (17%) and the actions of feral animals and pests (10%).

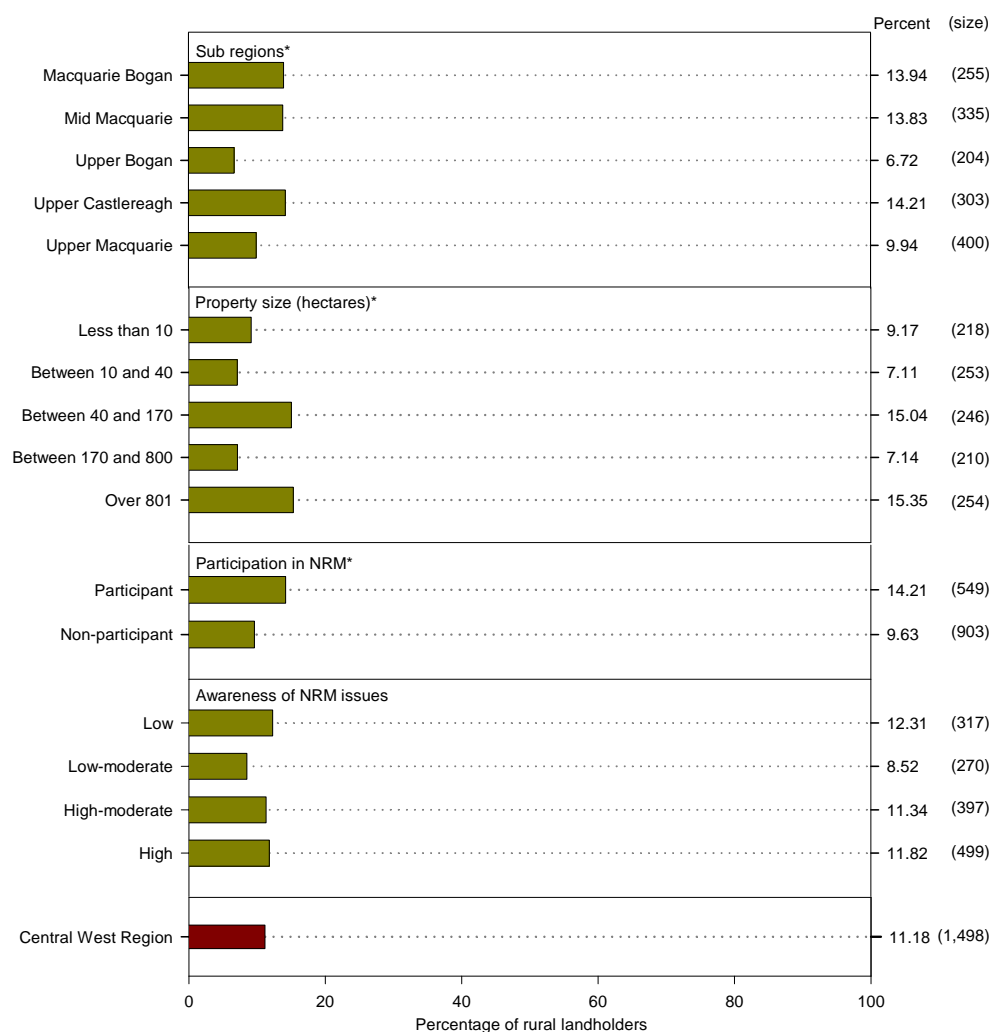
Figure 22 Waterways in poor condition: Beliefs about occurrence on rural properties



6.2.10 Poor Quality Ground Water

Amongst landholders within the region, 11% reported poor quality ground water as an issue on their property (Figure 23). This issue was less common amongst landholders in the Upper Bogan and more common on moderate (40 and 170 hectares) and larger size (over 801 hectares) properties.

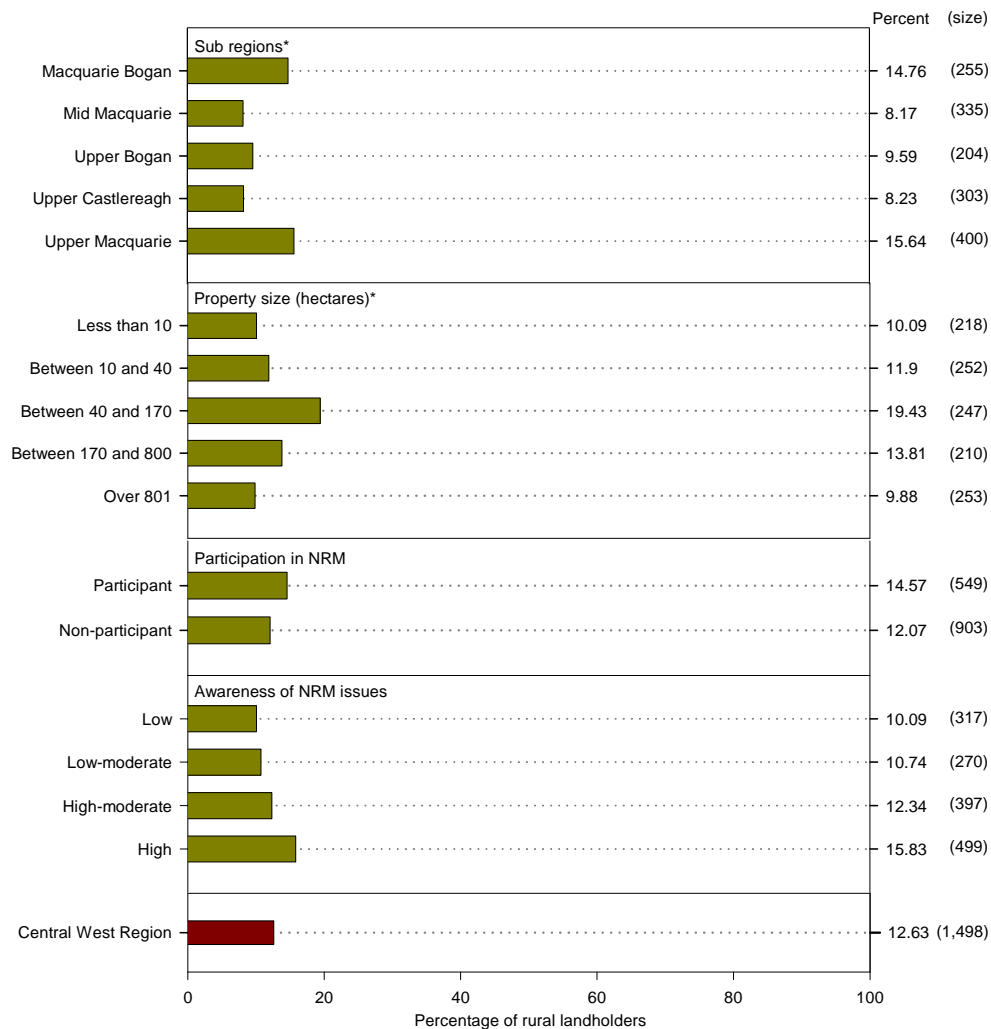
Figure 23 Poor quality groundwater: Beliefs about occurrence on rural properties



6.2.11 A Decline in Native Animals

Amongst landholders, 13% indicated the decline in native animals was an issue on their property (Figure 24). However, this issue was relatively more common in the Macquarie Bogan and Upper Macquarie subregions and on those properties of moderate size (40 to 170 hectares).

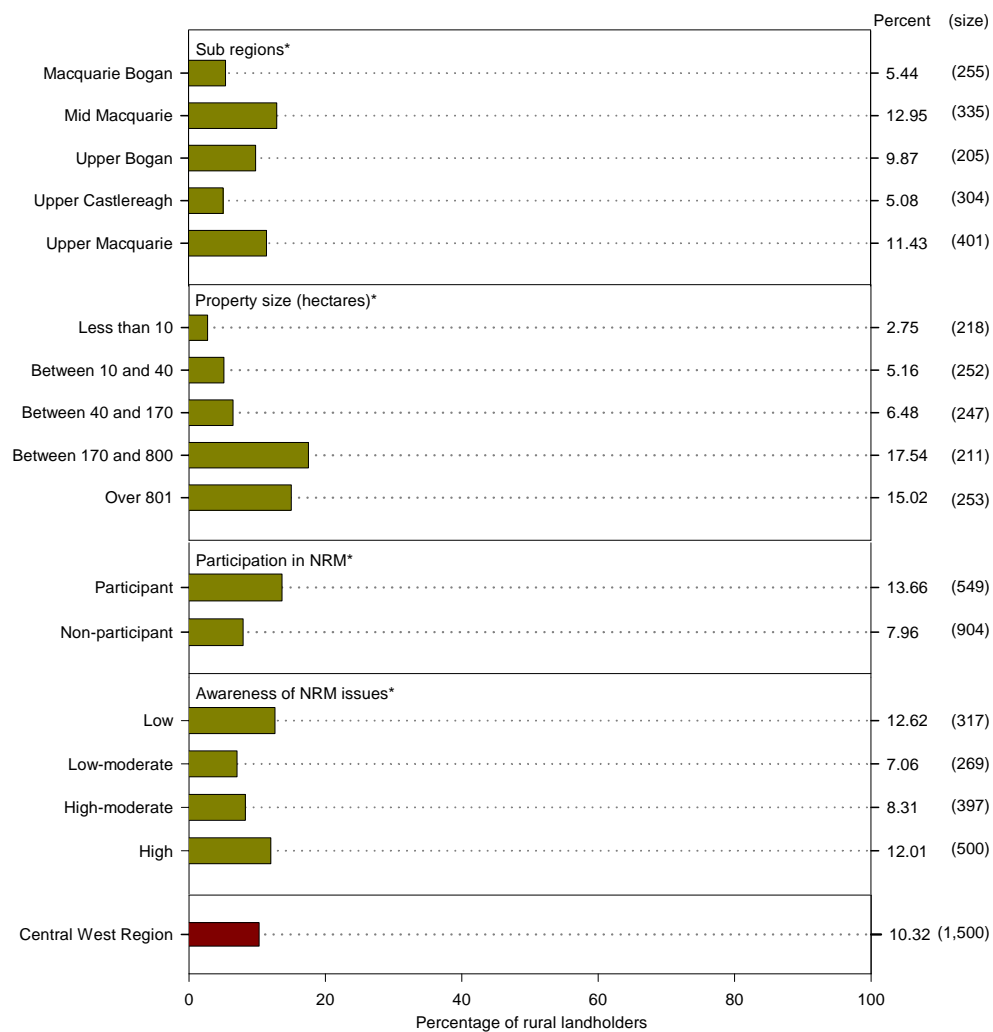
Figure 24 A decline in native animals: Beliefs about occurrence on rural properties



6.2.12 Salinity

Only 10% of landholders reported salinity as an issue on their property, with it being more common on larger properties and properties in the Mid Macquarie and Upper Macquarie subregions (Figure 25). Interestingly while salinity was more likely to be identified amongst landholders who had also participated in NRM activities, it was also more likely to be identified amongst landholders with both low and high awareness of environmental issues. It may be the case that those landholders with low awareness of NRM issues are reporting a more ‘stereotypical’ response, while those with greater awareness of NRM issues are reporting on the basis of a more informed response.

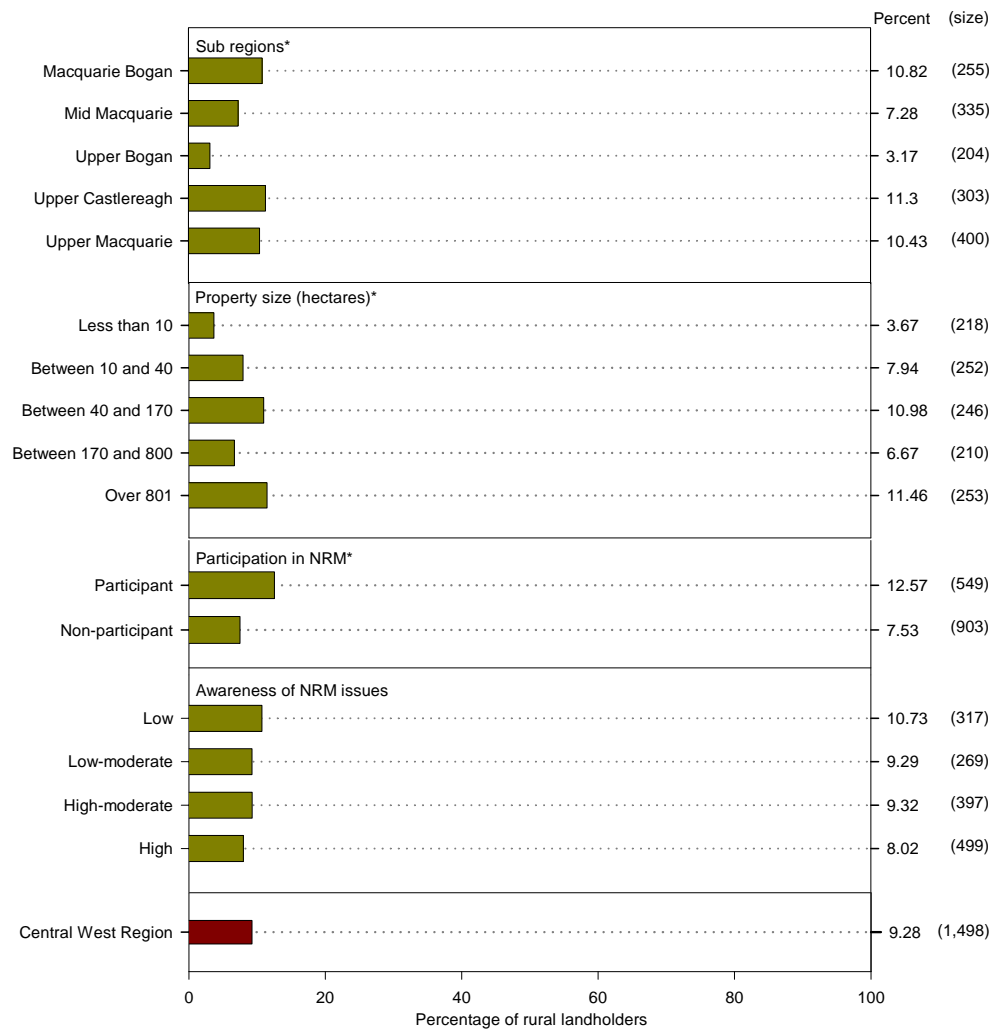
Figure 25 Salinity: Beliefs about occurrence on rural properties



6.2.13 Poor Quality Surface Water

Poor quality surface water was reported by 9% of landholders and appeared to be more common issue amongst larger landholders and those landholders in the Macquarie Bogan, Upper Castlereagh and Upper Macquarie subregions (Figure 26).

Figure 26 Poor quality surface water: Beliefs about occurrence on rural properties



6.3 Rural Properties: Funding and Action to Address Environmental Issues

In order to better identify the priority actions to address NRM issues on properties, all landholders were asked to identify what activities they would undertake if they had \$20,000 to spend on improving the condition of land and water on their property. As shown in Figure 27 and primarily as a consequence of the drought, 33% of landholders indicated they would install and develop water infrastructure on their property. This generally included the installation and upgrading of farm dams, irrigation pumps, water storage tanks and bores.

As also shown in Figure 27, while installing and developing water infrastructure was the primary activity to be undertaken, other on farm activities included the planting of vegetation (19%), controlling weeds (15%) and fencing (15%).

Figure 27 “Imagine you had \$20,000 you could spend on improving the condition of land or water on your property. What would be the main thing you would do?” (Central West region)

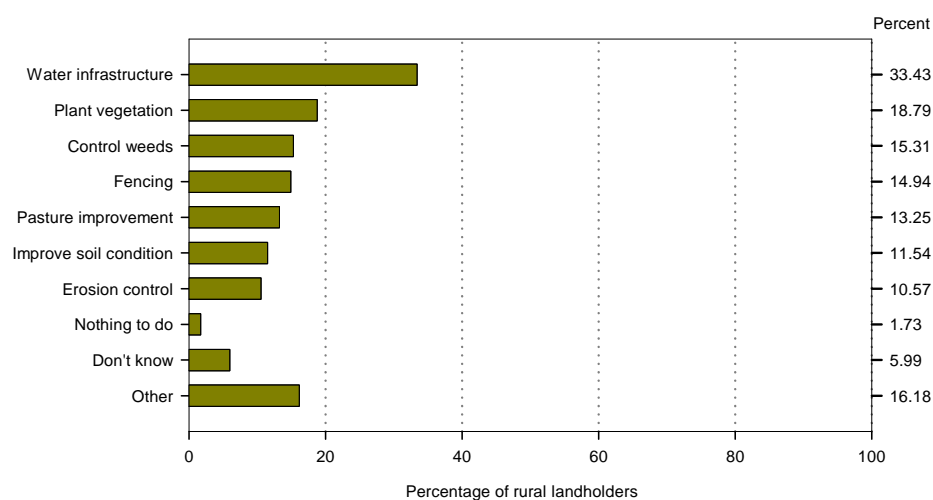


Figure 28 shows within each of the five subregions, the activities landholders would be most likely to undertake to address issues on their property. While water infrastructure, planting vegetation and fencing are common activities across all subregions, weed control is also important in the Upper Bogan and Upper Macquarie subregions.

Figure 28 “Imagine you had \$20,000 you could spend on improving the condition of land or water on your property. What would be the main thing you would do?”

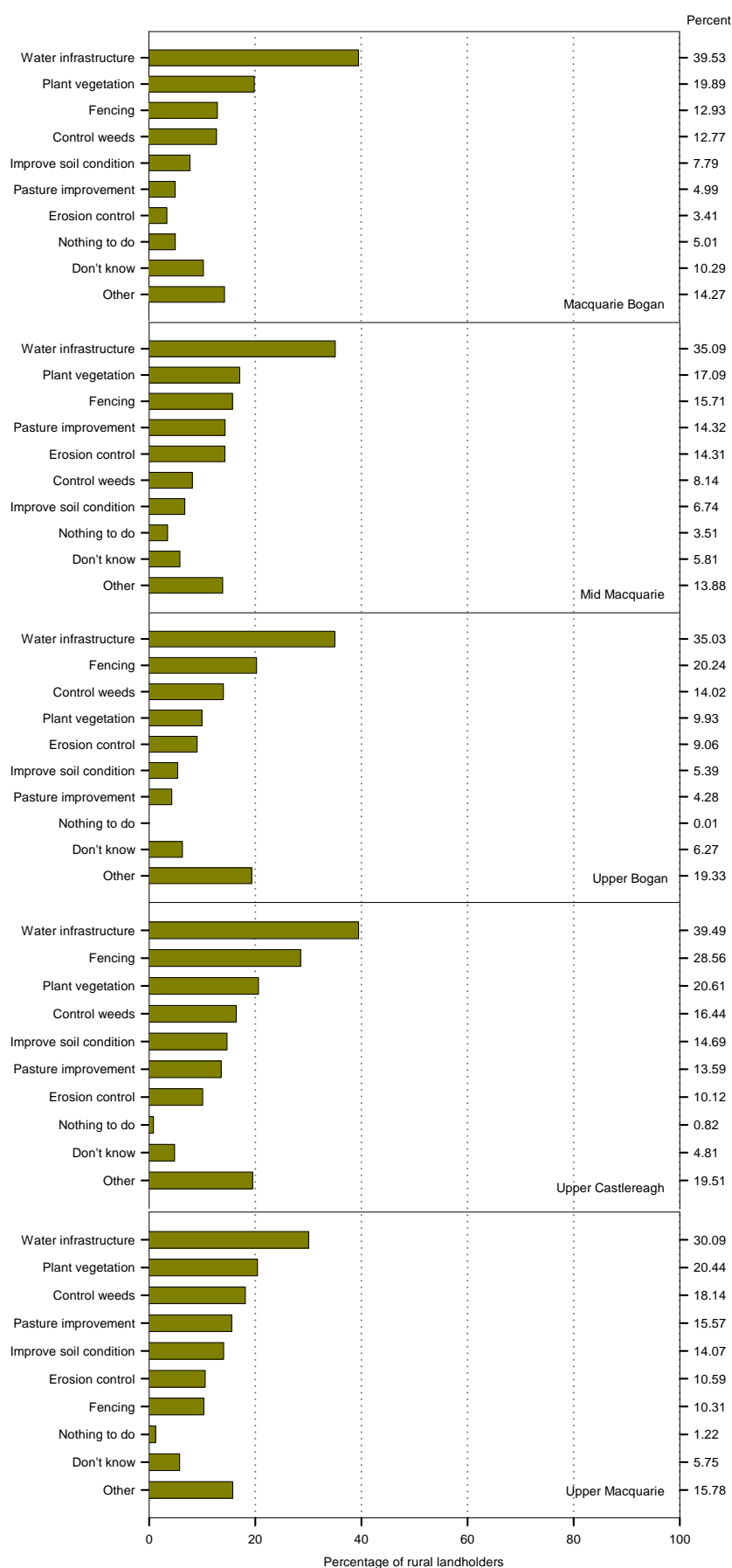


Figure 29 shows that 87% of landholders would be willing to apply for funds to improve the condition of their property. The highest percentage of landholders willing to apply for funds is found in the Upper Bogan. With the exception of landholders with small properties, willingness to apply for funds appears to increase with the size of the landholder's property. As is also evident in Figure 29, there is also a linear relationship between age and willingness to apply for funds, with younger landholders more likely to apply for funds than older landholders.

Figure 29 "If you were given the opportunity to apply for funds to obtain a grant, which you didn't have to repay, to improve the condition of your property, would you take up the grant?"

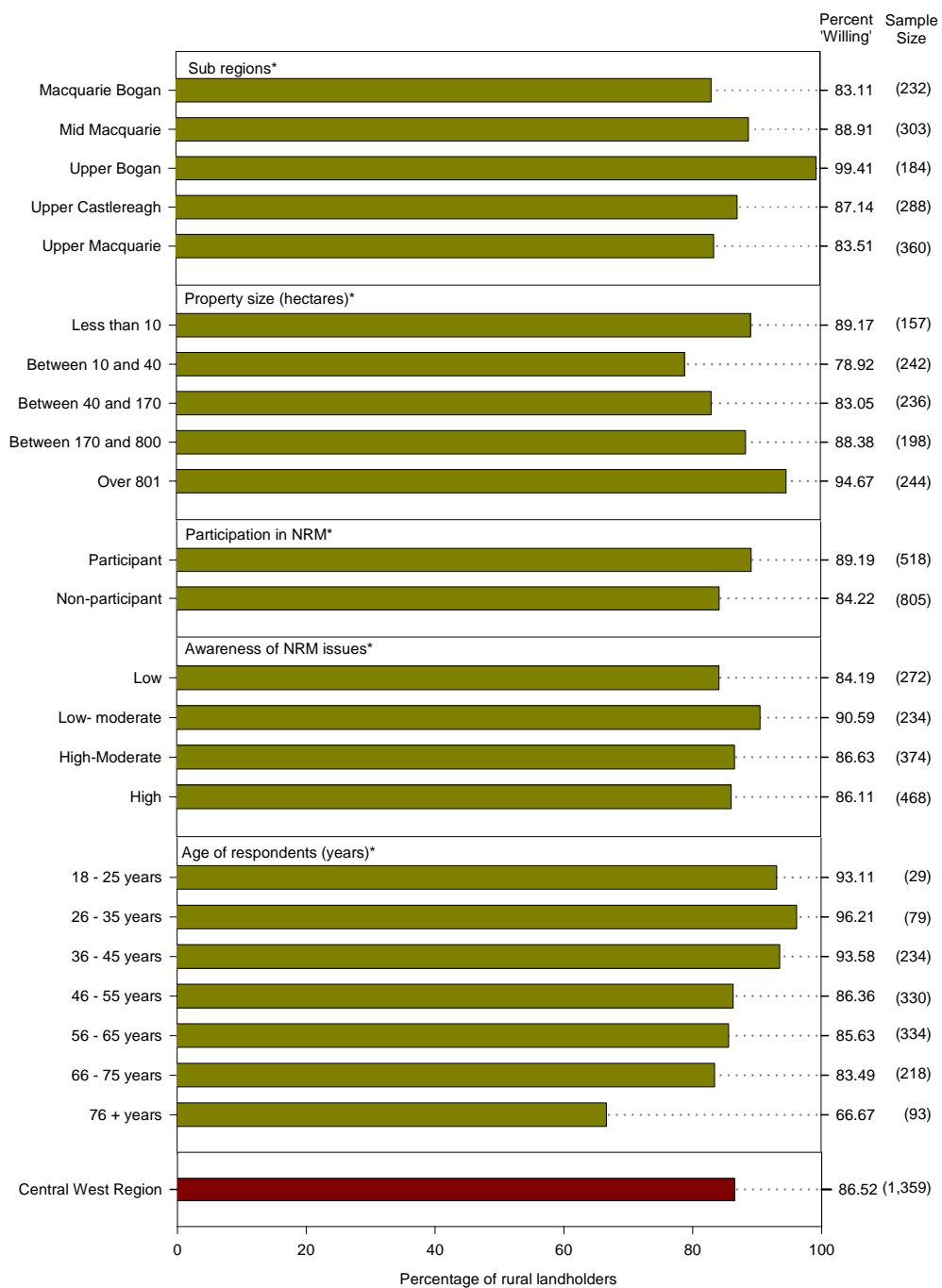
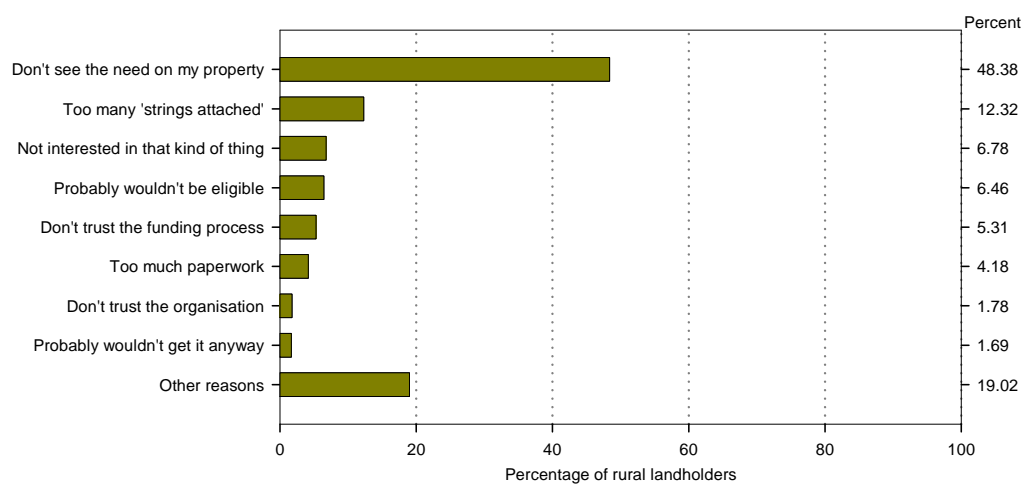


Figure 30 shows the reasons landholders gave for not apply for funds. The most common reason given was that they did not believe there was a need on their property (48%), although 12% would not consider applying for funds because of the ‘strings attached’ to the funding.

Figure 30 Reasons given for not applying for funds to improve the condition of rural properties



Note: In responding to this question a respondent may have had multiple responses. As a respondent may appear in more than one row of the graph and as such the row percentages should not be summed.

6.4 Local Area: Environmental Health

In Section 6.1 landholders made an assessment of the health of the land and water on their property as of the current time and in terms of what the property was like 10 years ago. A similar question, which focussed on the health of the natural environment in the local area, was also asked of all respondents which included both landholders and urban residents. In this context the local area was defined as the local town and surrounds for urban residents and the local district for landholders.

Figure 31 shows that on a 10 point scale, with end points of (1) very unhealthy and (10) very healthy, rural and urban residents in the Central West region gave the health of the local area a mean score of 6.5.

However, Figure 31 also shows that amongst landholders the health of the natural environment in the local area is higher for landholders in the Upper Bogan when compared to other subregions. In contrast amongst urban residents, the health of the natural environment in the local area is highest in the in the Mid Macquarie subregion when compared to other subregions.

Furthermore, rural landholders judged the health of their local area significantly higher than urban residents as did rural landholders on larger relative to smaller properties. Figure 31 also shows that as respondents become more aware of environmental issues, the more likely they are to judge the local environment as healthy.

Figure 32 asks respondents the same question about the health of the natural environment in the local area, but in this case asks them to make a judgement about the local area as it was 10 years ago.

Figure 33 compares the overall health score for the natural environment in the local area 10 years ago to what it is today. As shown in Figure 33, the health of the local environment was generally viewed as far healthier 10 years ago than it is now.

While overall all landholders and urban residents in the region judged the local area to be far healthier 10 years ago as compared to now, the one exception was rural landholders in the Upper Bogan. Amongst these landholders there was a tendency to judge the local environment as more healthier now than it was 10 years ago (Figure 33).

Figure 31 “If you were to judge the health of the natural environment *in your local area* on a scale from one (1) to ten (10), with one (1) being very unhealthy and ten (10) being very healthy, what score would you give it?”

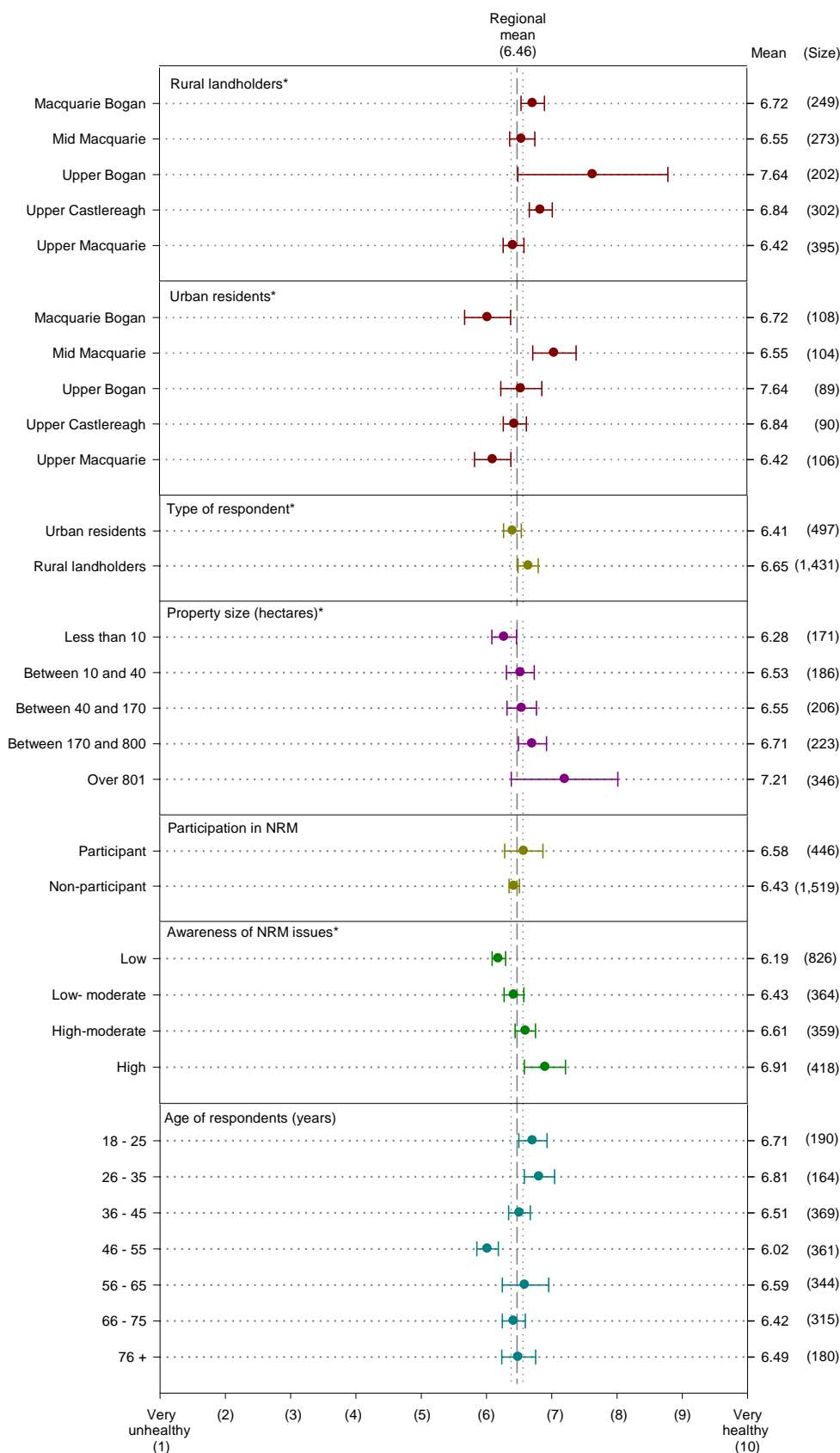


Figure 32 “Thinking back 10 years, and again on a scale from one (1) to ten (10) how would you have judged the health of the natural environment *in your local area* then?”

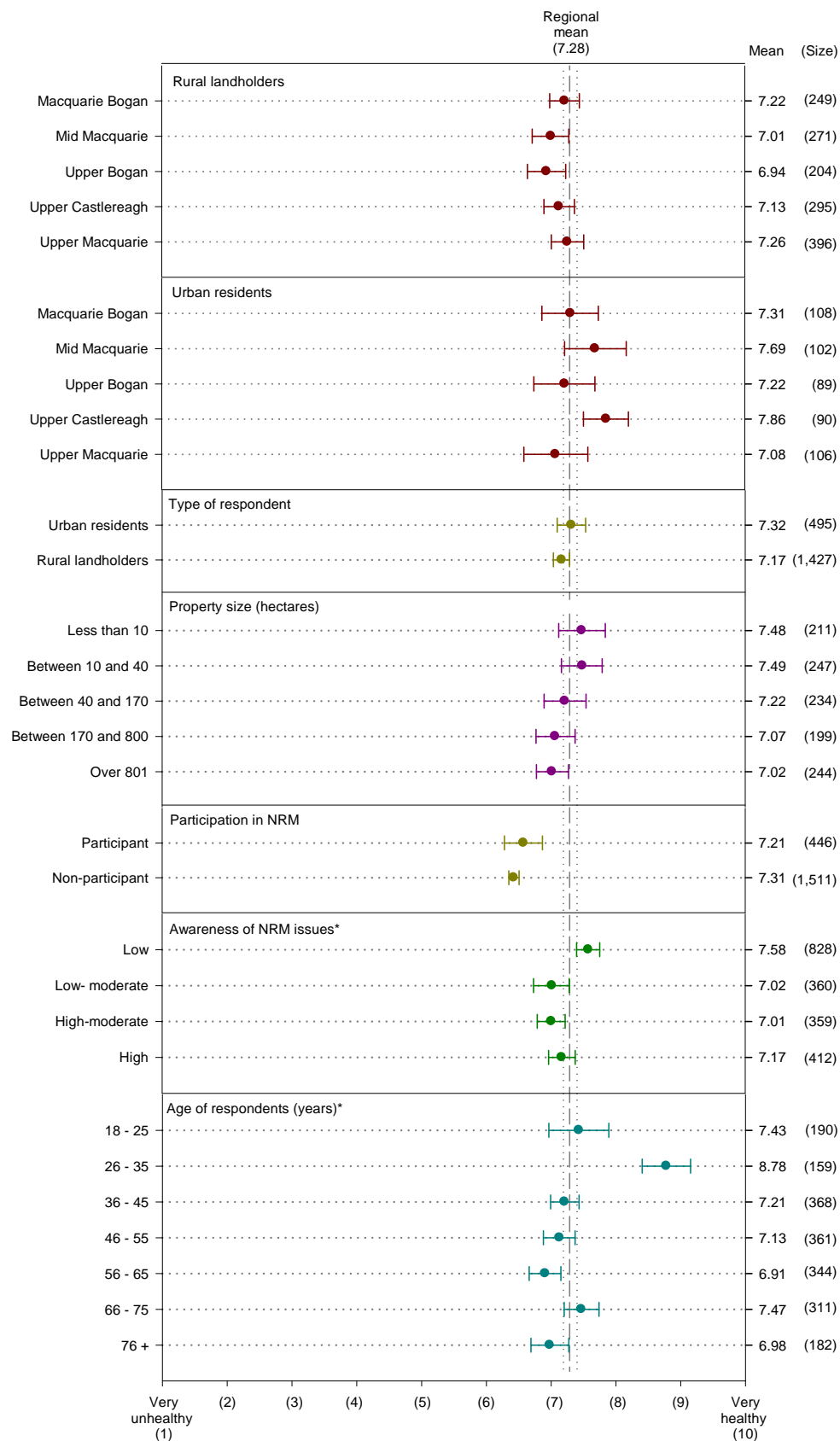
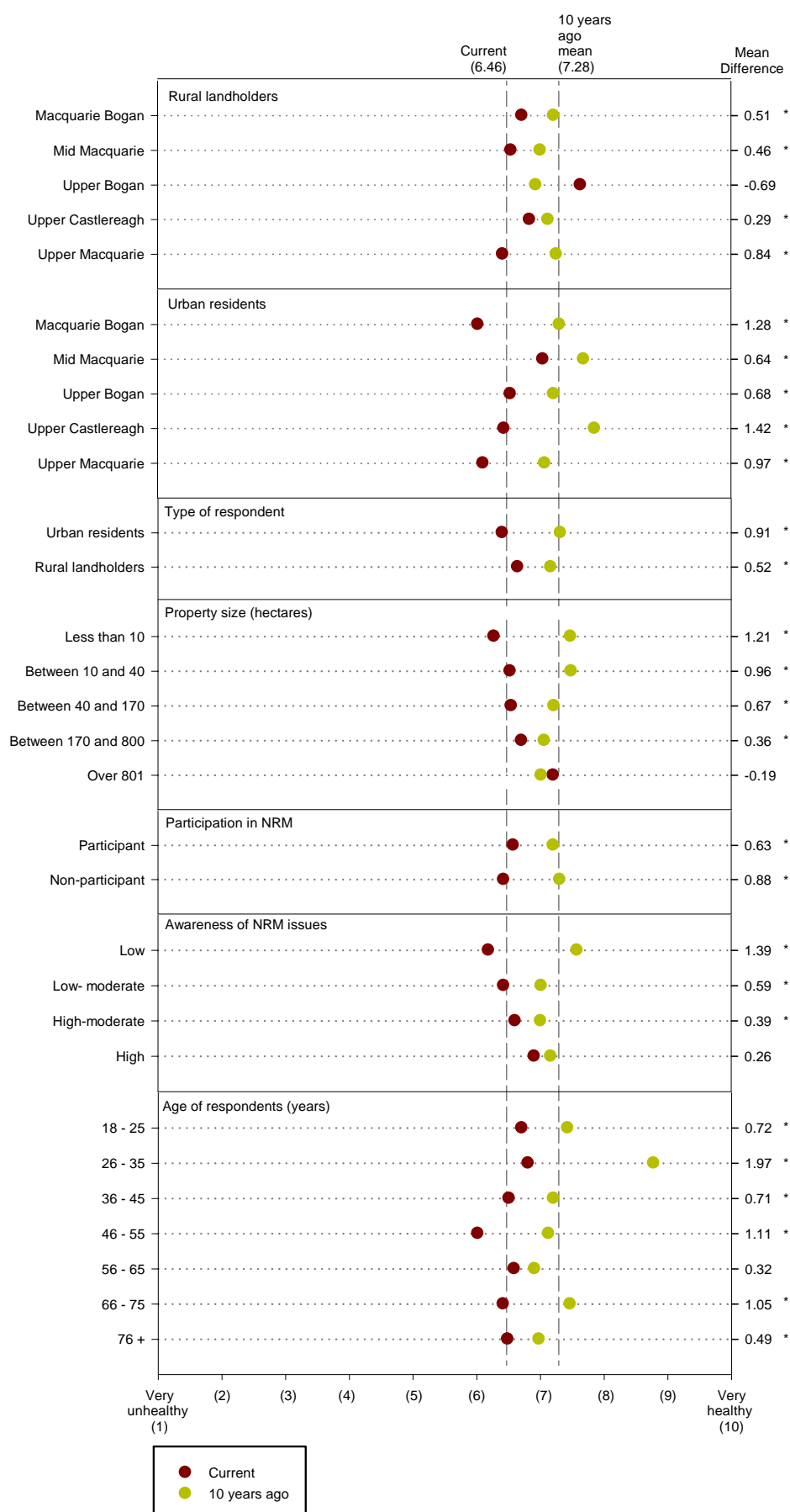


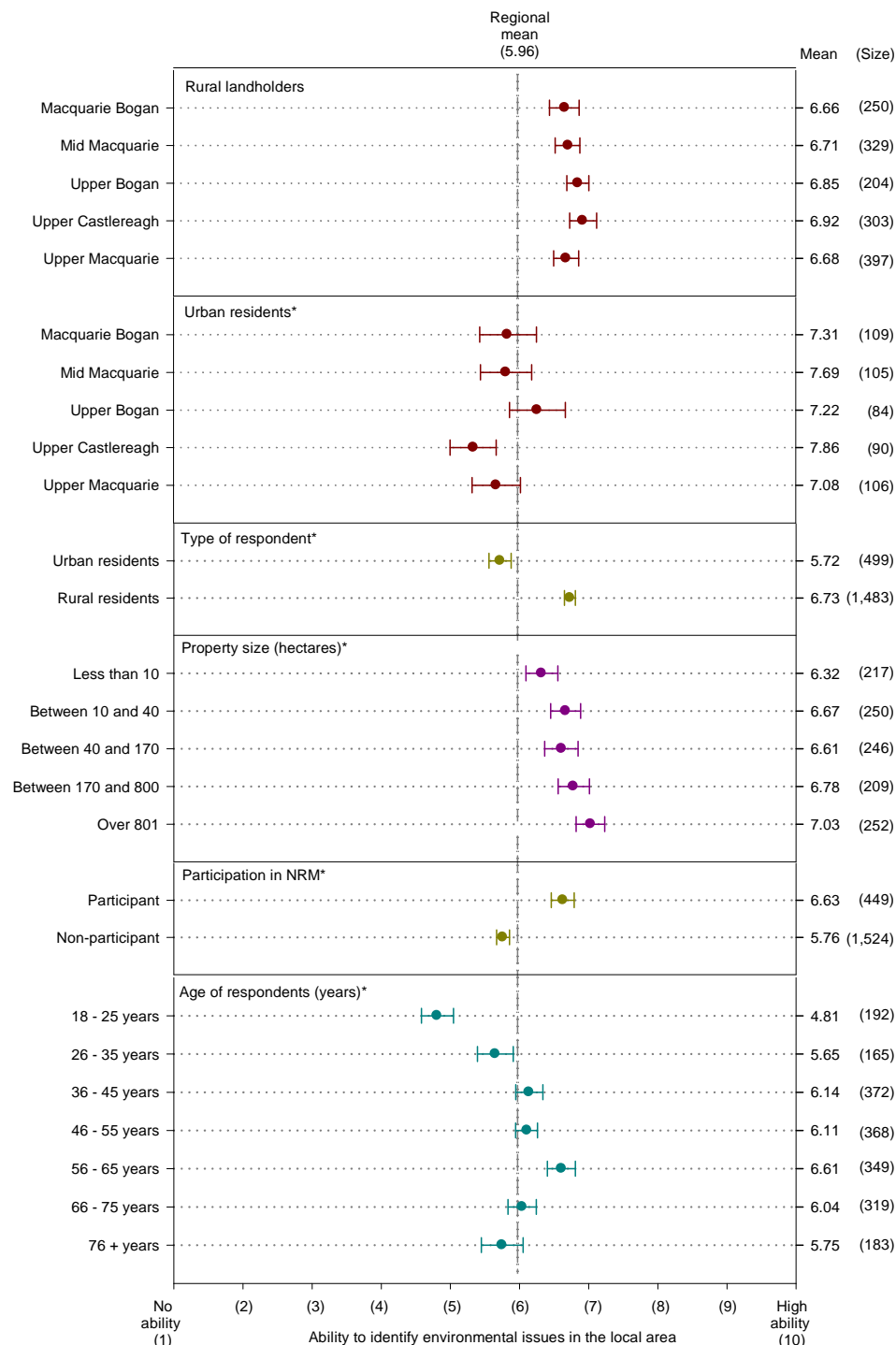
Figure 33 A comparison of beliefs about the health of the local area now and 10 years ago



6.5 Local Area: Environmental Issues

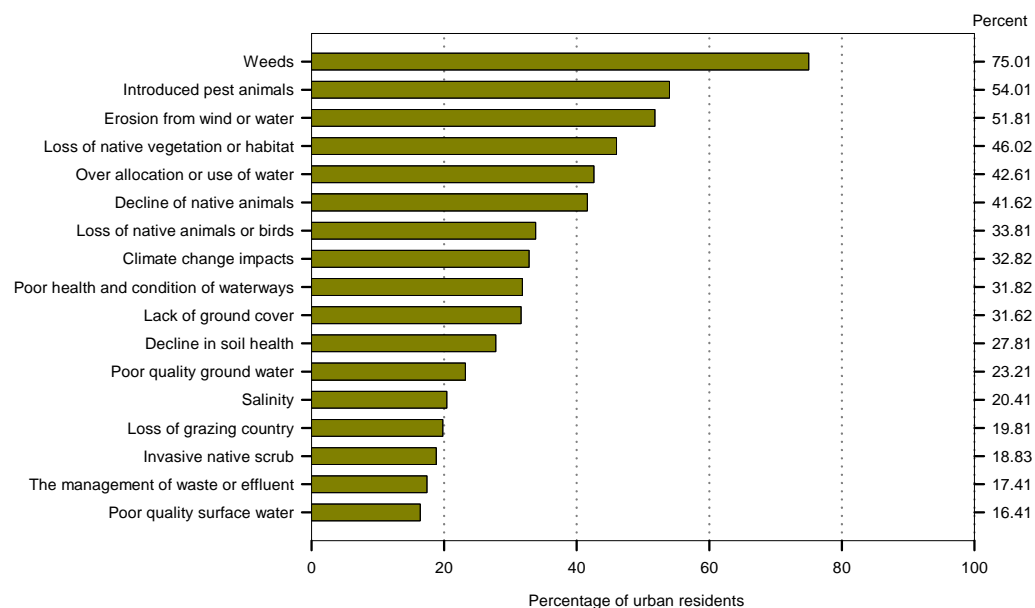
As shown in Figure 34, landholders were better able to identify environmental issues when compared to urban residents. This was particularly the case amongst landholders on larger rather than smaller landholdings. An interesting relationship with the age of respondents is also shown in Figure 34, where younger and older respondents have relatively less ability to identify environmental issues when compared to those respondents of middle age.

Figure 34 “If you were to give a score from one (1) to ten (10) in relation to your ability to identify environmental issues in your local area with one (1) being no ability to identify these issues and ten (10) being able to identify all the issues, what score would you give yourself?”



All urban residents were asked to identify ‘possible’ environmental issues that they believed were occurring in their local area. Figure 35 shows that amongst urban residents in the Central West region, the three most commonly reported issues were weeds (75%); introduced pests (54%) and erosion from wind and water (52%). These three issues were the same environmental issues reported independently and most frequently by landholders as occurring on their property (Section 6.2).

Figure 35 “I am going to read out a list of possible environmental issues. As I read out each issue, could you tell me if you think it occurs in your local area?” |
(Based on urban residents in the Central West region)

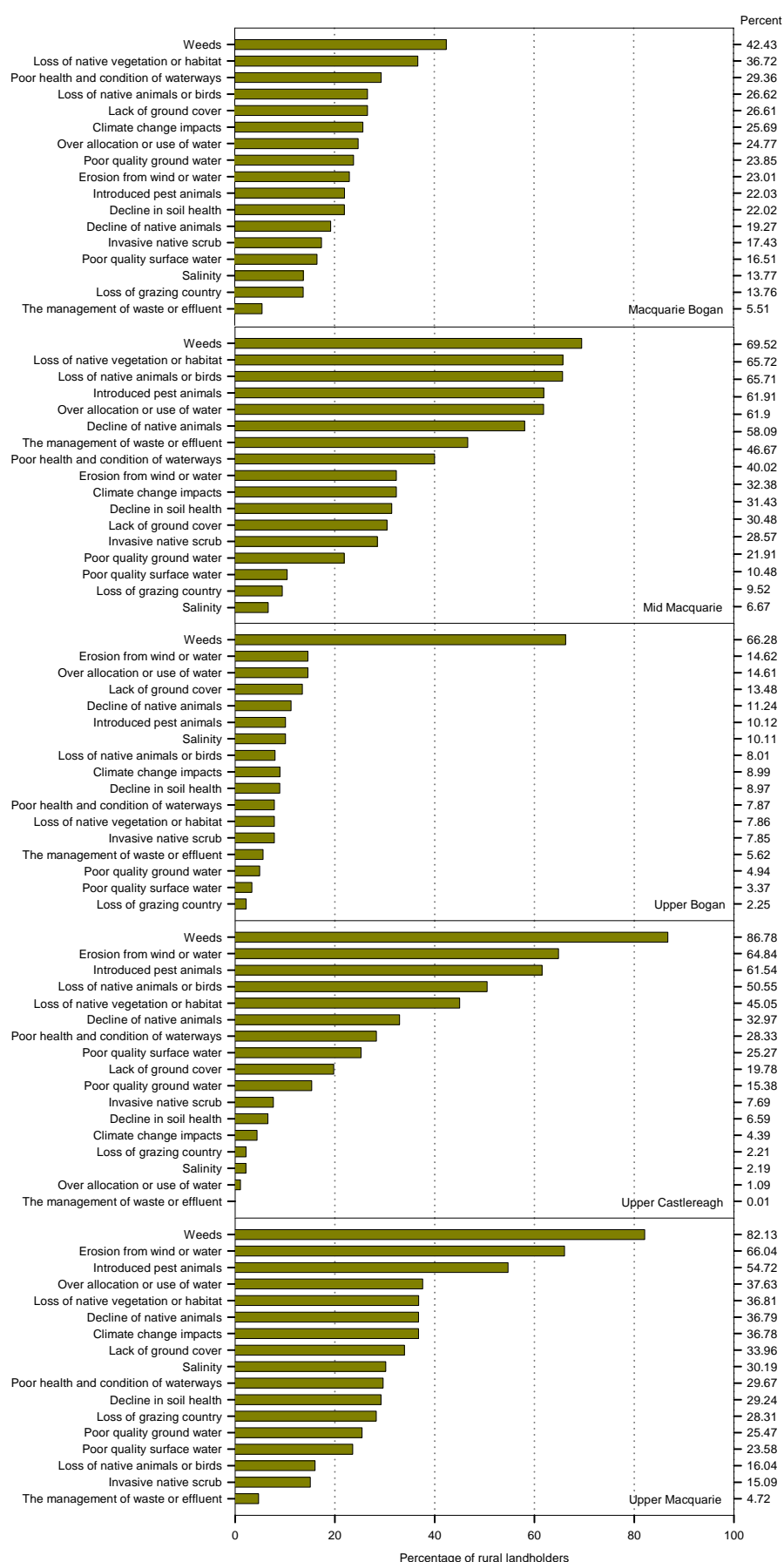


Note: In responding to this question a respondent may have had multiple responses. As a respondent may appear in more than one row of the graph and as such the row percentages should not be summed.

Figure 36 shows the most commonly reported environmental issues amongst urban residents within each of the five subregions. What is immediately apparent from Figure 36 is that in comparison to other subregions, urban residents in the Upper Bogan tend to be focussed more specifically on weeds as a single environmental issue.

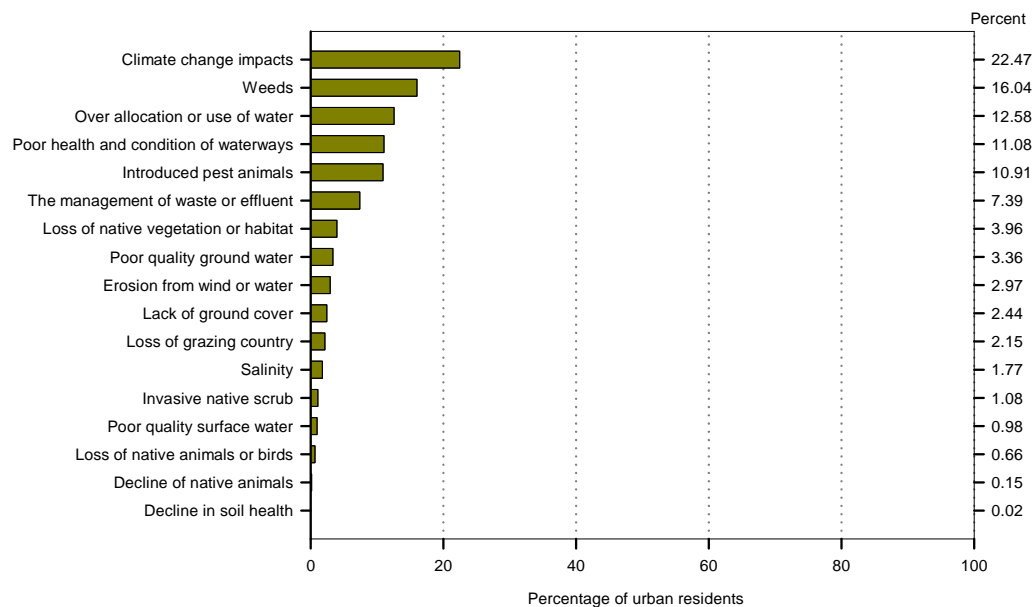
In addition, weeds, introduced pests and erosion are only the top three issues in the Upper Castlereagh and Upper Macquarie subregions. In the Macquarie Bogan the three most commonly reported issues are weeds, the loss of native vegetation and the condition of water ways. In the Mid Macquarie the three issues are weeds, the loss of native vegetation and the loss of native animals, while in the Upper Bogan as indicated earlier the most commonly reported issue is that of weeds.

Figure 36 “I am going to read out a list of possible environmental issues. As I read out each issue, could you tell me if you think it occurs in your local area?”



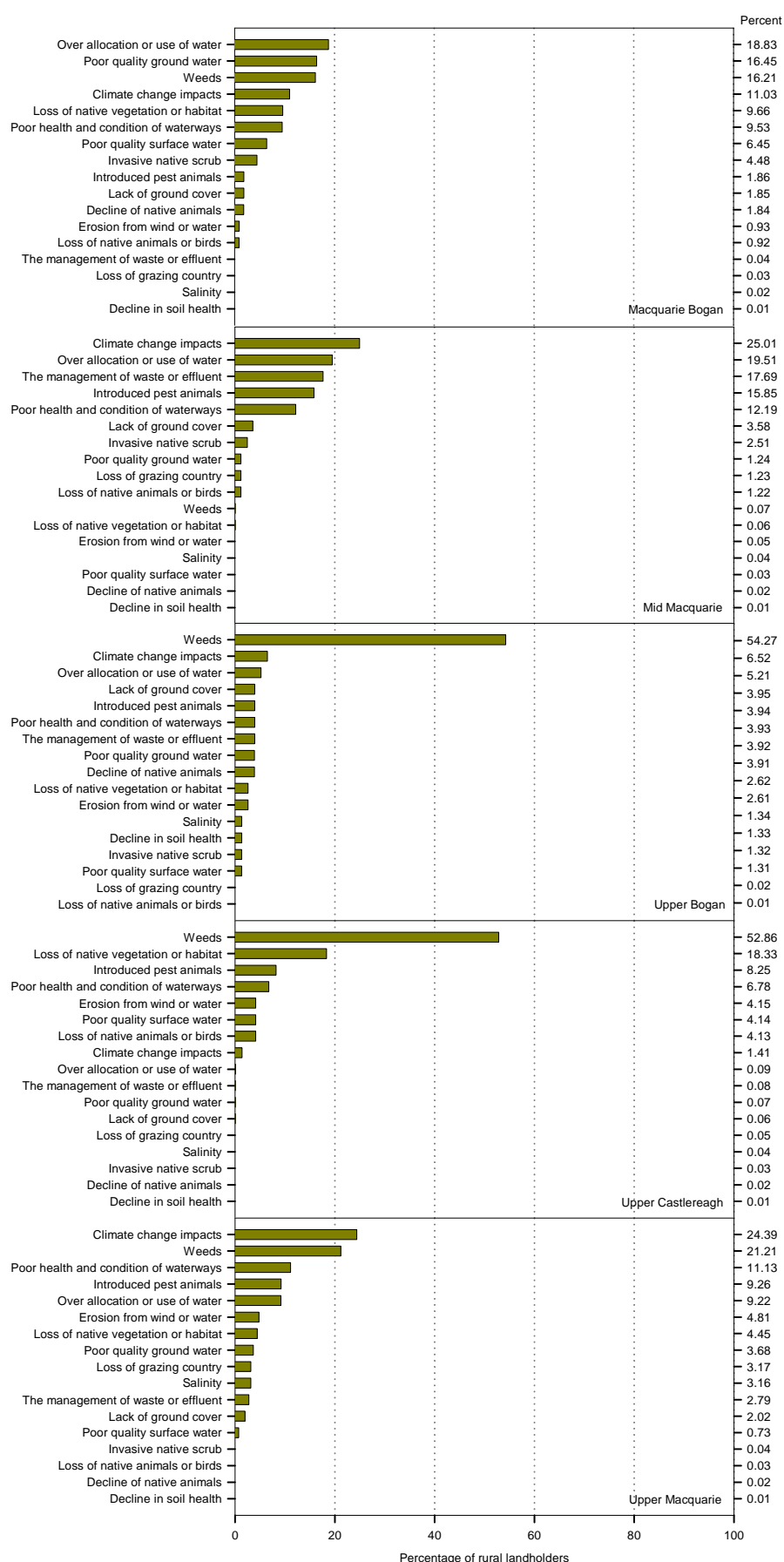
After respondents had identified the environmental issues of concern to them, they were also asked to identify which of the issues they had identified was the most important issue that needed to be addressed. Figure 37 indicates that amongst urban residents within the region, the three most important issues were climate change impacts (23%); weeds (16%) and the over allocation or use of water (13%).

Figure 37 “You have identified [from Figure 35] as issues. Which of these do you think is the most important issue that needs to be addressed?” (Central West region)



Although climate change, weeds and the over allocation or use of water were identified as the three most important environmental issues in the local area by urban residents, within each of the subregions some variation was evident in which environmental issues were identified as most important by urban residents (Figure 38). Although climate change issues are the most important issues for urban residents in the Upper and Mid Macquarie subregions, weeds is the most important issue in the Upper Bogan and Upper Castlereagh, while in the Macquarie Bogan the most important issue is the over allocation and use of water.

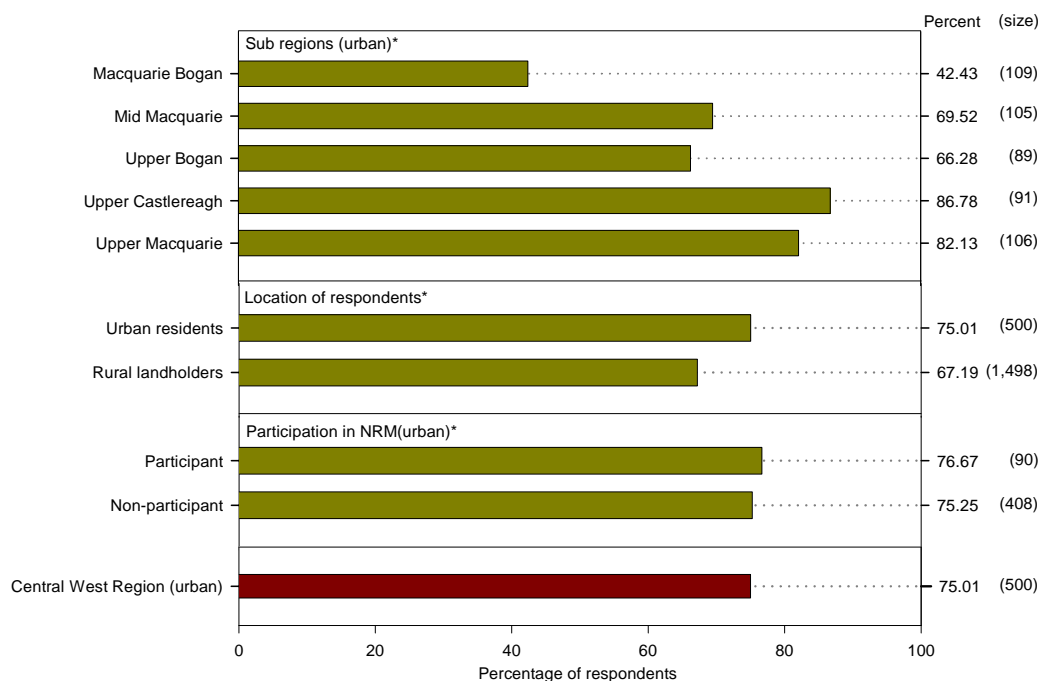
Figure 38 “You have identified [from Figure 35] as issues. Which of these do you think is the most important issue that needs to be addressed?” (Regional catchments)



6.5.1 Weeds

Amongst urban residents, weeds were commonly reported amongst residents of the Upper Castlereagh and Upper Macquarie subregions (Figure 39). A higher percentage of urban residents reported weeds as an issue in the local area when compared to the reporting of weeds on properties by landholders.

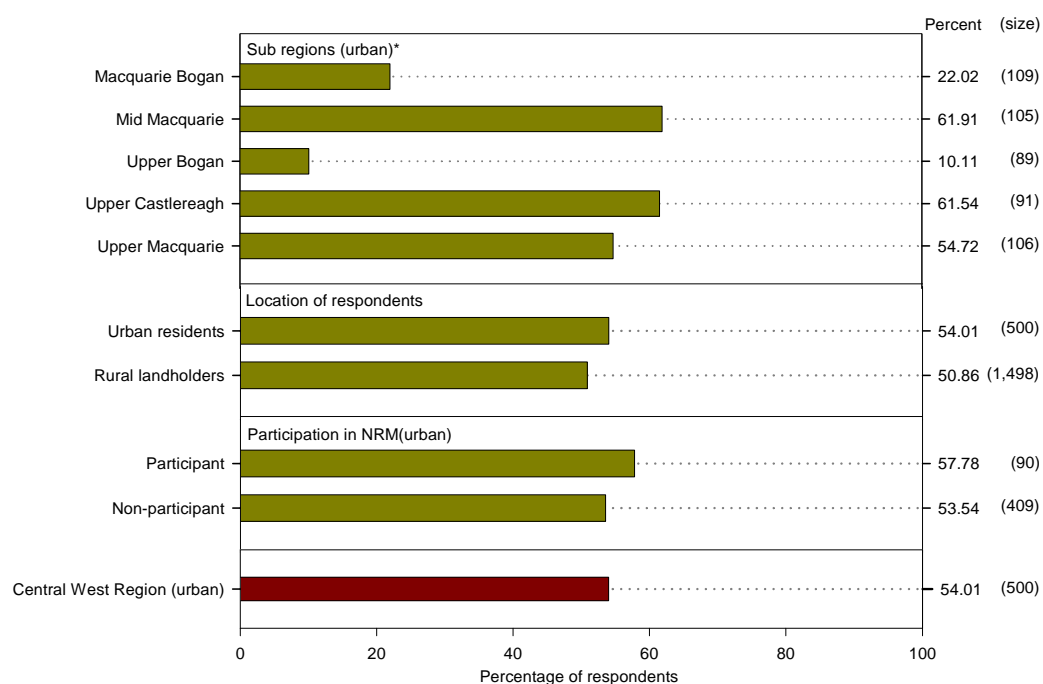
Figure 39 Weeds: Beliefs about occurrence amongst urban residents



6.5.2 Introduced Pest Animals

A similar percentage of urban residents and landholders reported an issue with introduced pest animals (Figure 40). This was less of an issue amongst residents in the Upper Bogan subregion.

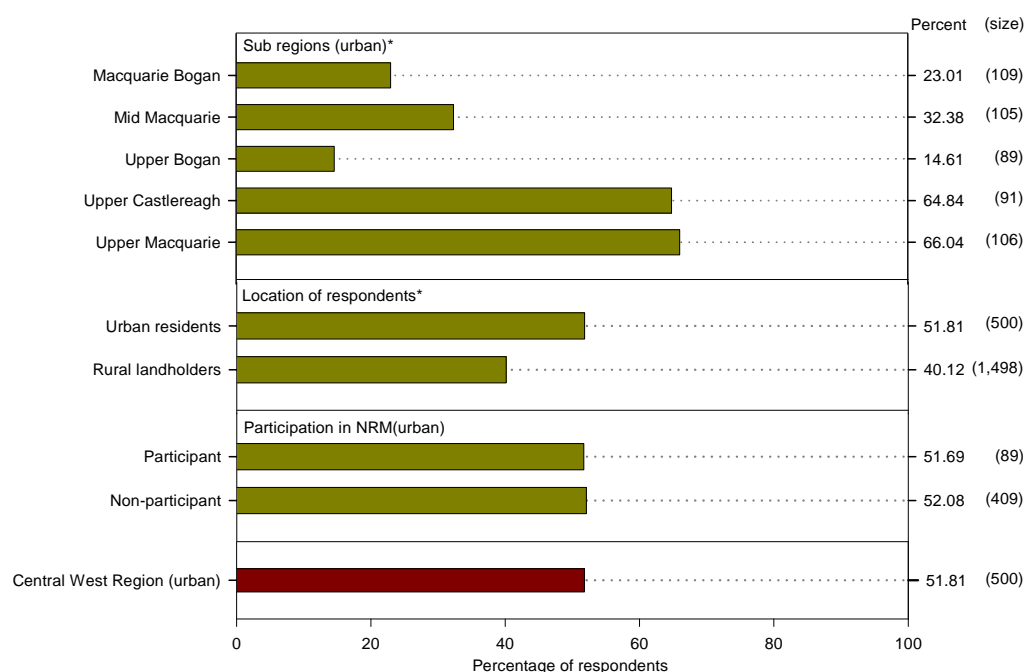
Figure 40 Pest animals: Beliefs about occurrence in the local area amongst urban residents



6.5.3 Erosion from Wind or Water

Urban residents tended to report erosion as an issue more frequently than did landholders. As also shown in Figure 41, this was most commonly reported amongst urban residents in the Upper Castlereagh and Upper Macquarie subregions.

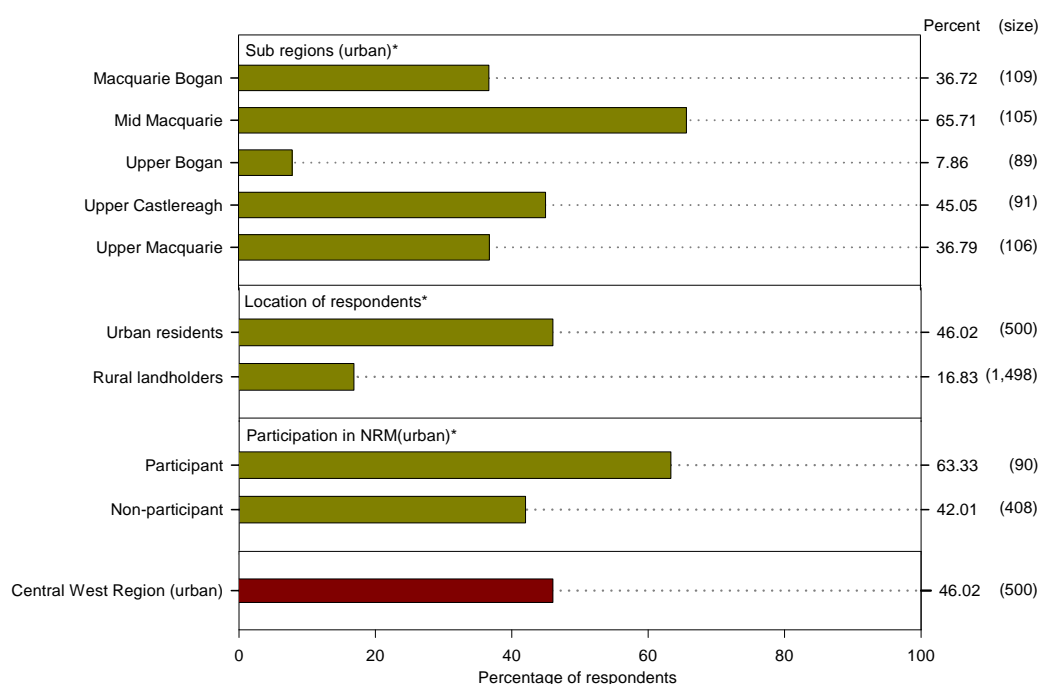
Figure 41 Erosion: Beliefs about occurrence amongst urban residents



6.5.4 Loss of Native Vegetation or Habitat

The loss of native vegetation was an issue reported by 46% of urban residents and by 17% of rural landholders (Figure 42). Urban residents who had participated in NRM activities and who lived in the Mid Macquarie subregion were most likely to report this as an issue in their local area.

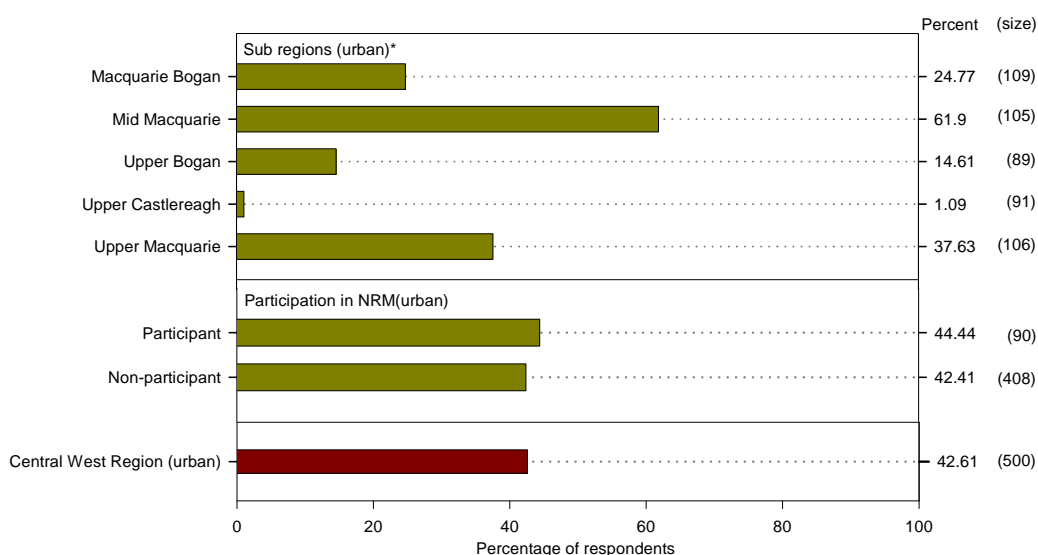
Figure 42 Loss of native vegetation: Beliefs about occurrence amongst urban residents



6.5.5 Over Allocation or Use of Water

Sixty-two percent of urban residents in the Mid Macquarie subregion reported the over allocation and use of water as an issue, compared to 1% of urban residents in the Upper Castlereagh subregion (Figure 43).

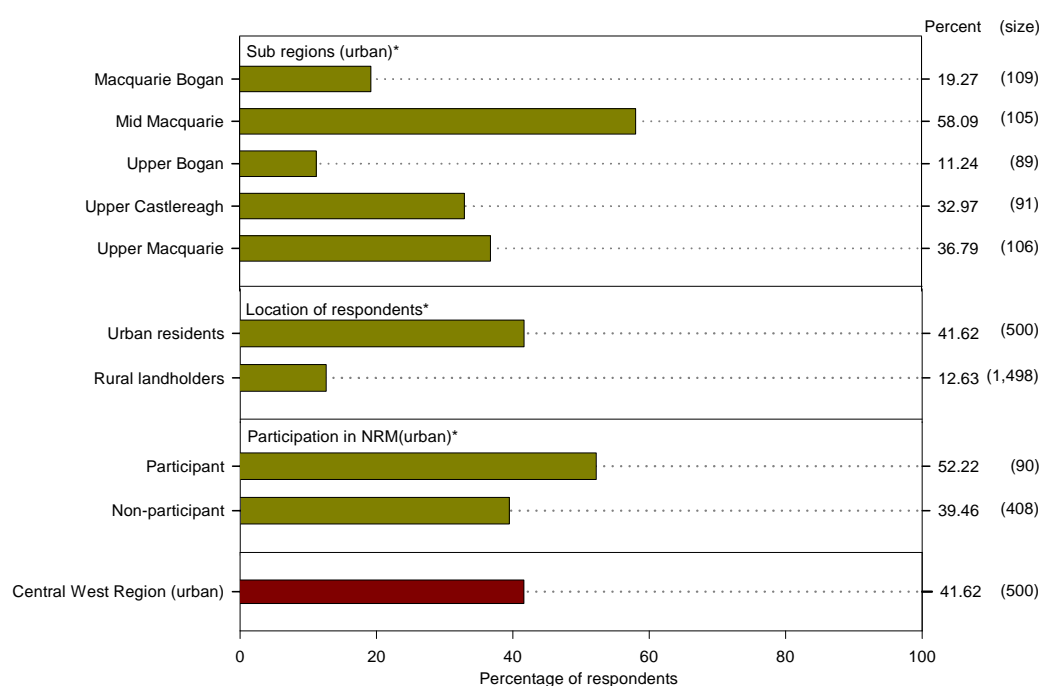
Figure 43 Over allocation or use of water: Beliefs about occurrence amongst urban residents



6.5.6 Decline in Native Animals

Issues with the decline in native animals were most commonly reported amongst urban residents in the Mid Macquarie subregion and amongst urban residents as compared to rural landholders (Figure 44).

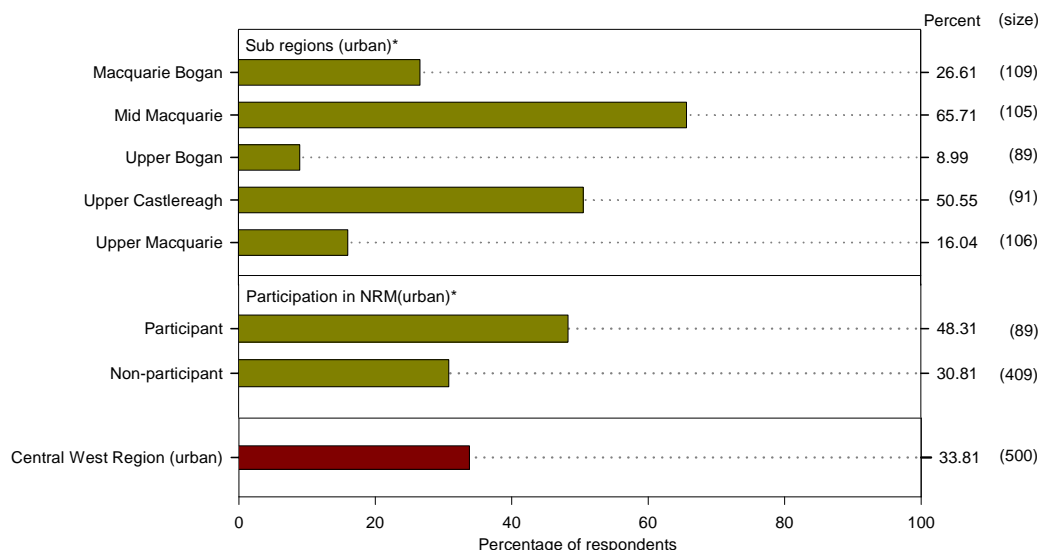
Figure 44 Decline in native animals: Beliefs about occurrence amongst urban residents



6.5.7 Loss of Native Animals or Birds

Urban residents in the Mid Macquarie and Upper Macquarie subregions were most likely to report issues with the loss of native animals or birds (Figure 45).

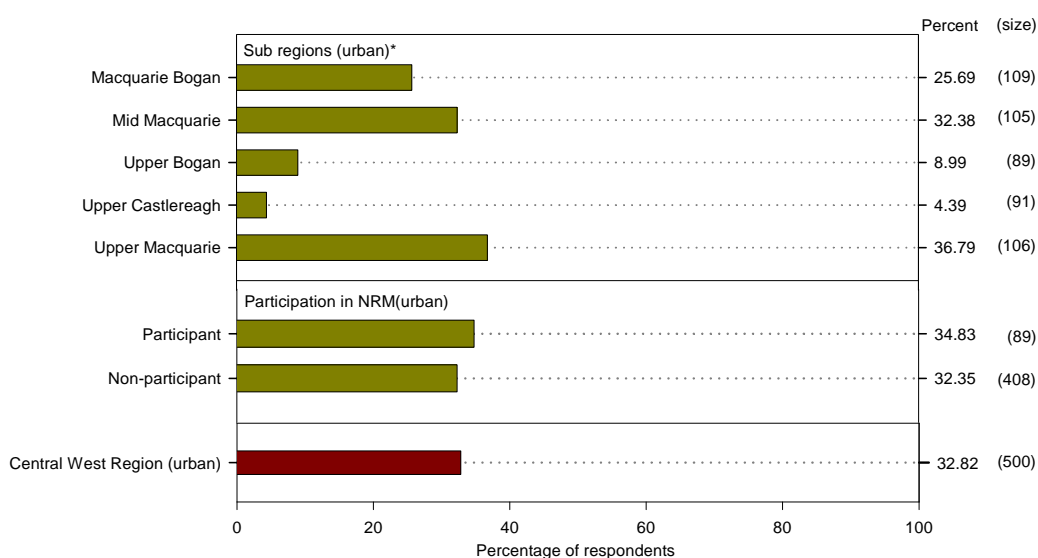
Figure 45 Loss of native animals and birds: Beliefs about occurrence amongst urban residents



6.5.8 Climate Change Impacts

As shown in Figure 46, climate change was an issue commonly reported by urban residents within the Upper Macquarie, Mid Macquarie and Macquarie Bogan subregions. It was significantly less likely to be reported amongst urban residents in the Upper Bogan and Upper Castlereagh subregions.

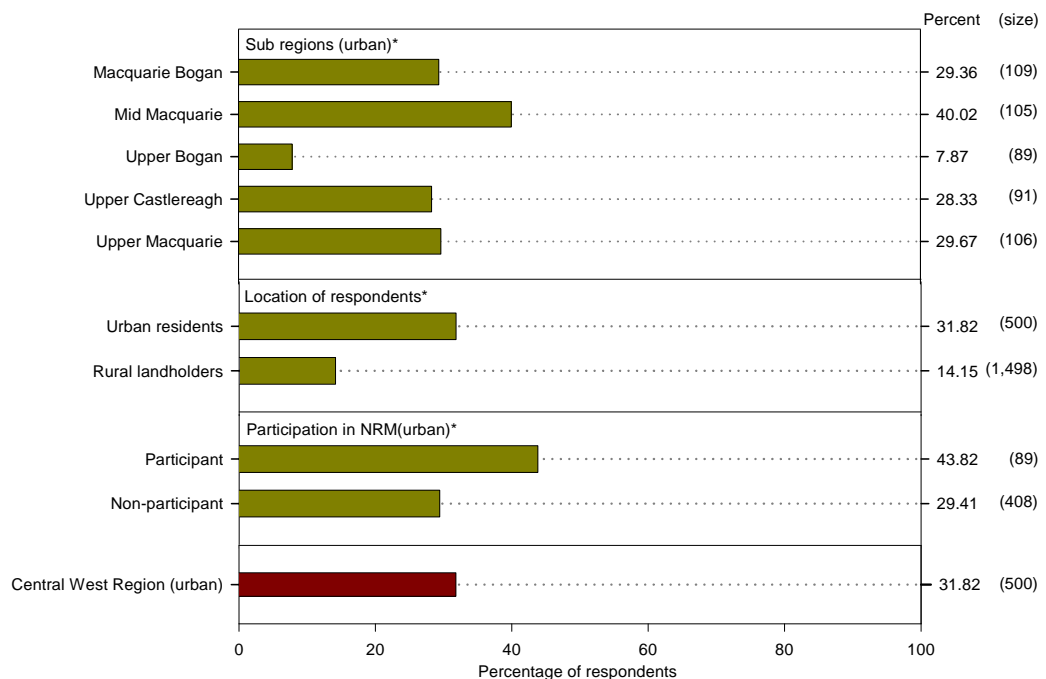
Figure 46 Climate change: Beliefs about occurrence amongst urban residents



6.5.9 Poor Health and Condition of Water Ways

A higher percentage of urban residents, relative to landholders, reported an issue with the poor health of waterways. This was less of an issue amongst urban residents in the Upper Bogan subregion (Figure 47).

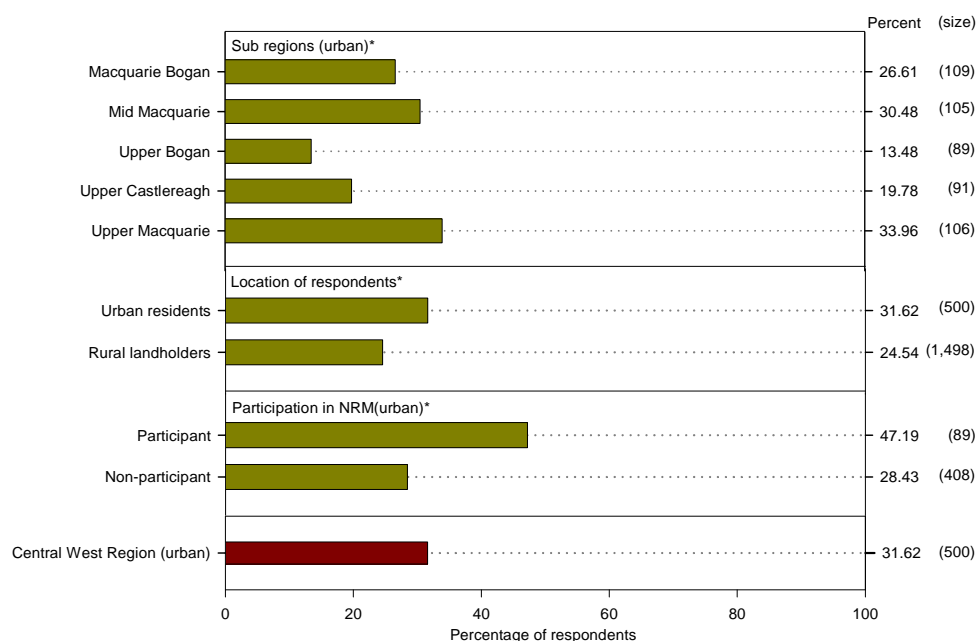
Figure 47 Poor health and condition of waterways: Beliefs about occurrence amongst urban residents



6.5.10 Lack of Ground Cover

Amongst urban residents the lack of ground cover was most commonly an issue in the Macquarie Bogan, Upper Castlereagh and Upper Macquarie subregions (Figure 48).

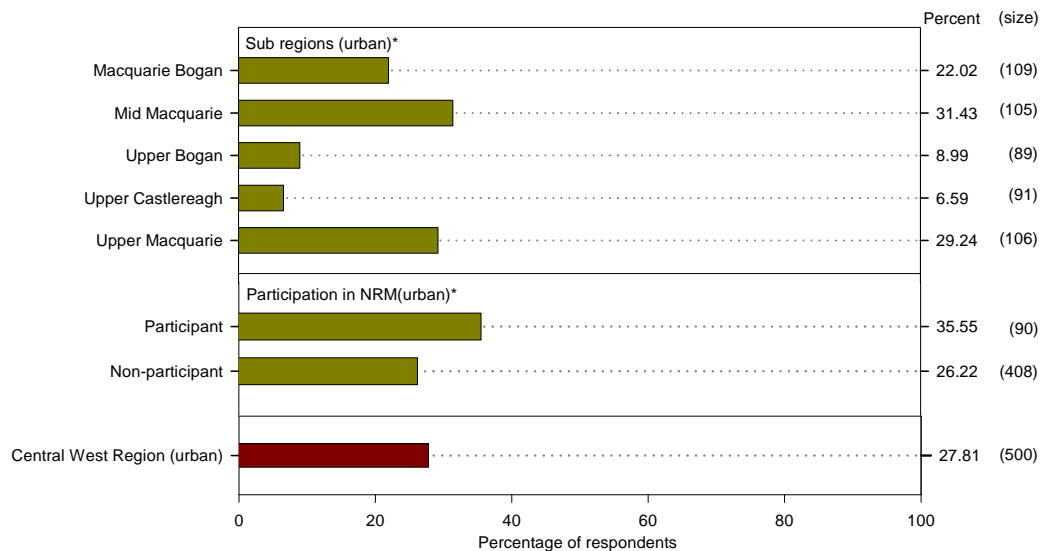
Figure 48: Lack of groundcover: Beliefs about occurrence amongst urban residents



6.5.11 Decline in Soil Health

Urban residents in the Mid Macquarie and Upper Macquarie subregions were most likely to report the decline in soil health as an issue when compared to urban residents living within other subregions (Figure 49).

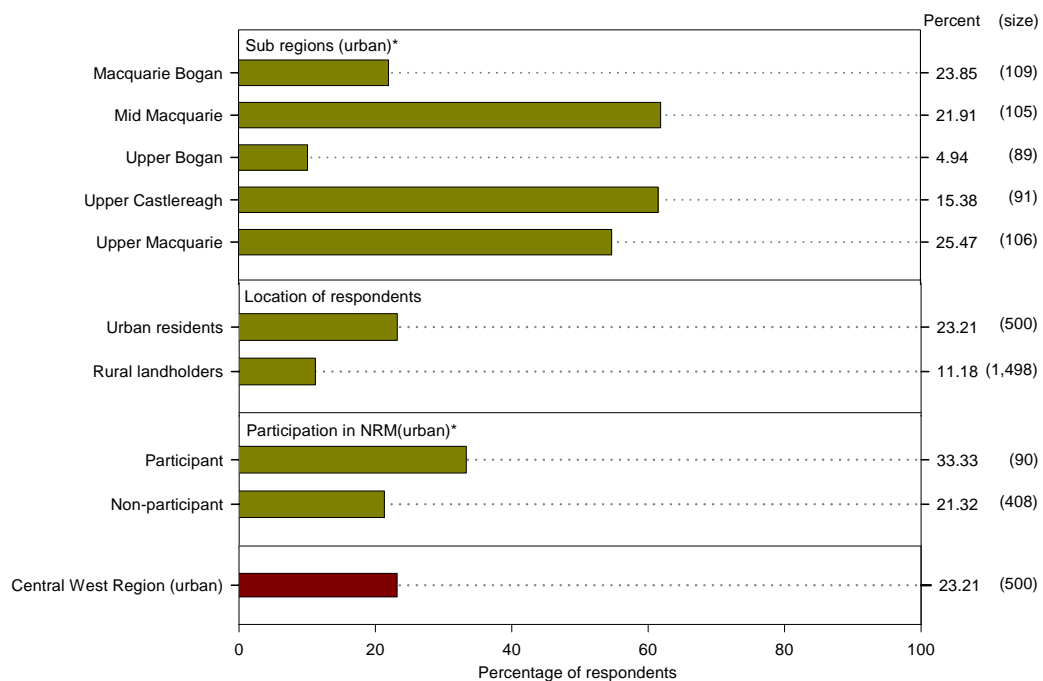
Figure 49 Decline in soil health: Beliefs about occurrence in the local area amongst urban residents



6.5.12 Poor Quality Groundwater

Amongst urban residents poor quality groundwater was most commonly reported as an issue in the Mid Macquarie, Upper Castlereagh and Upper Macquarie subregions (Figure 50).

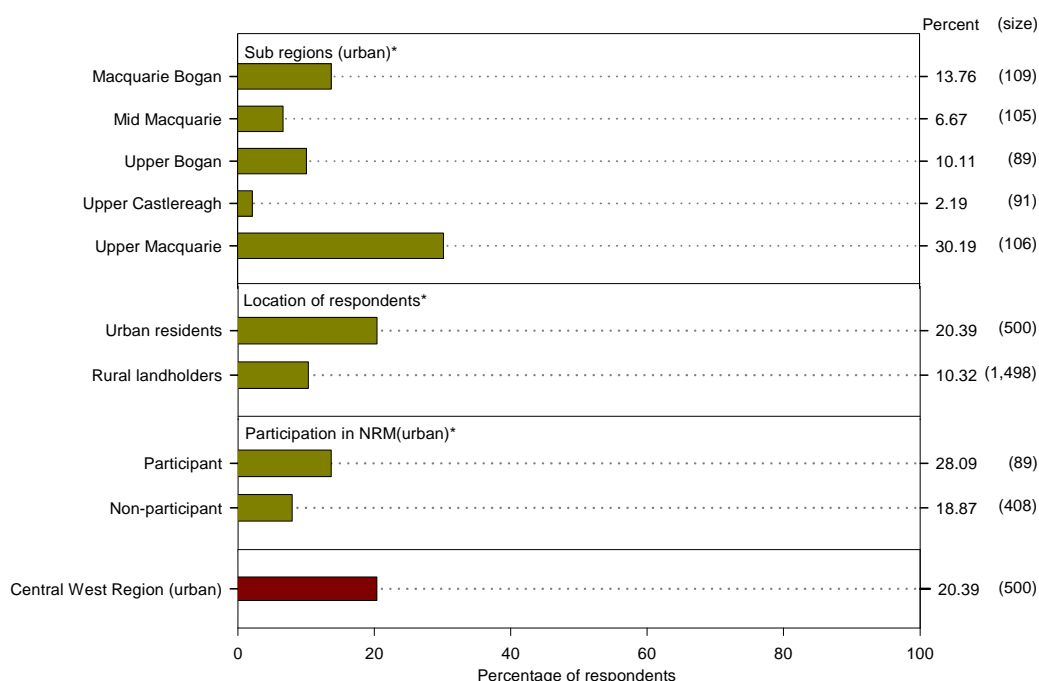
Figure 50 Poor quality groundwater: Beliefs about occurrence amongst urban residents



6.5.13 Salinity

A high percentage of urban residents as compared to landholders reported salinity as an issue (Figure 51). In addition urban residents in the Upper Macquarie subregion and those who had participated in NRM activities were also more likely to report salinity as an issue in the local area.

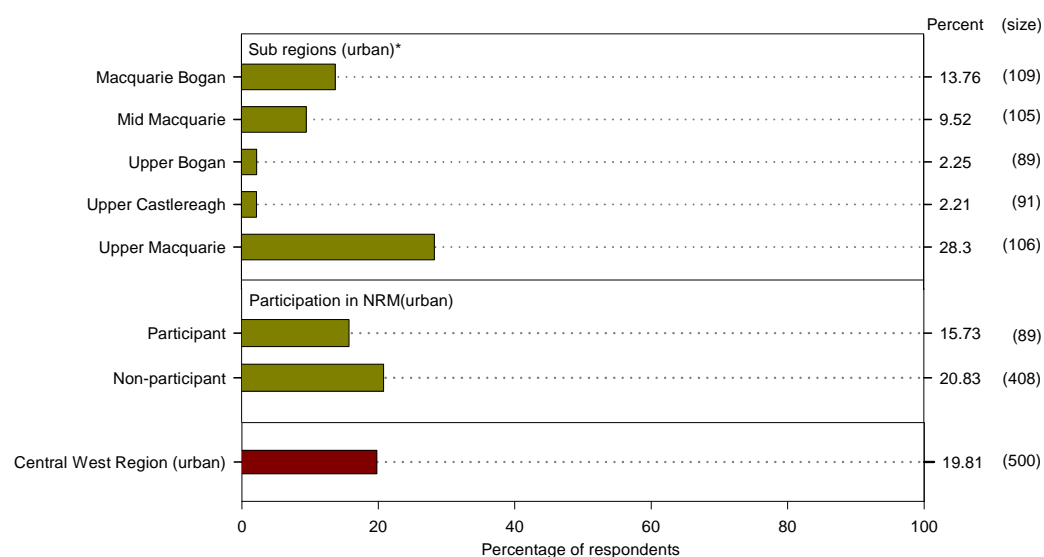
Figure 51 Salinity: Beliefs about occurrence in the local area amongst urban residents



6.5.14 Loss of Grazing Country

In relation to the loss of grazing country, urban residents in the Upper Macquarie were most likely to report this as an issue when compared to urban resident from other subregions (Figure 52).

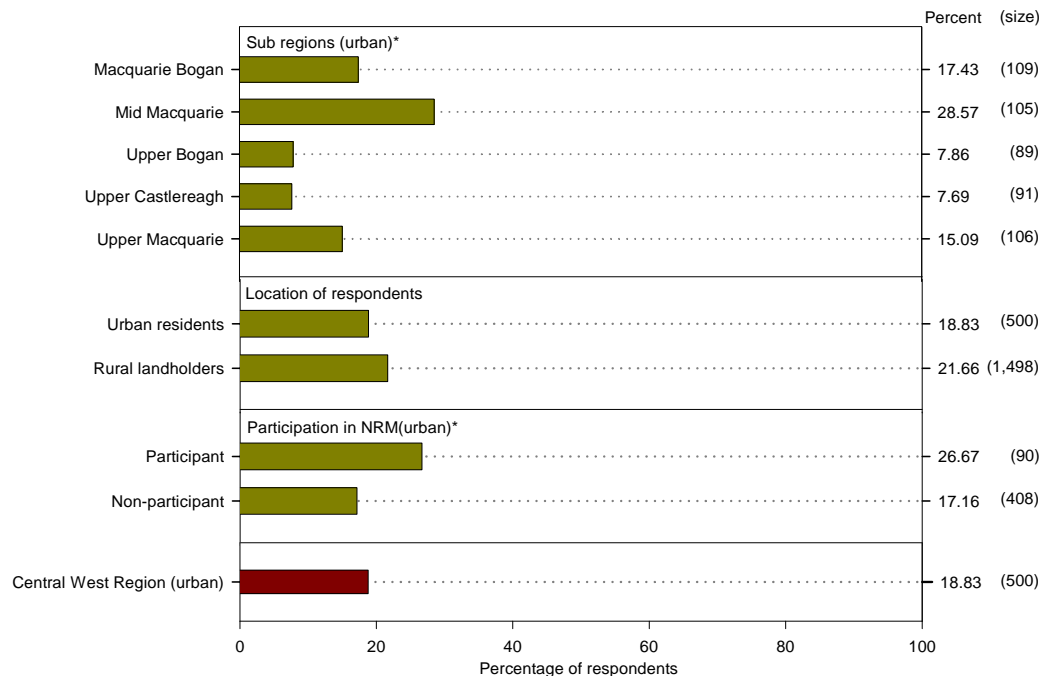
Figure 52 Loss of grazing country: Beliefs about occurrence amongst urban residents



6.5.15 Invasive Native Scrub

Urban residents who lived in the Mid Macquarie were significantly more likely to report invasive native scrub as an issue in their local area (Figure 53). In addition, those who had participated in NRM activities were also more likely to report this as an issue than other urban residents.

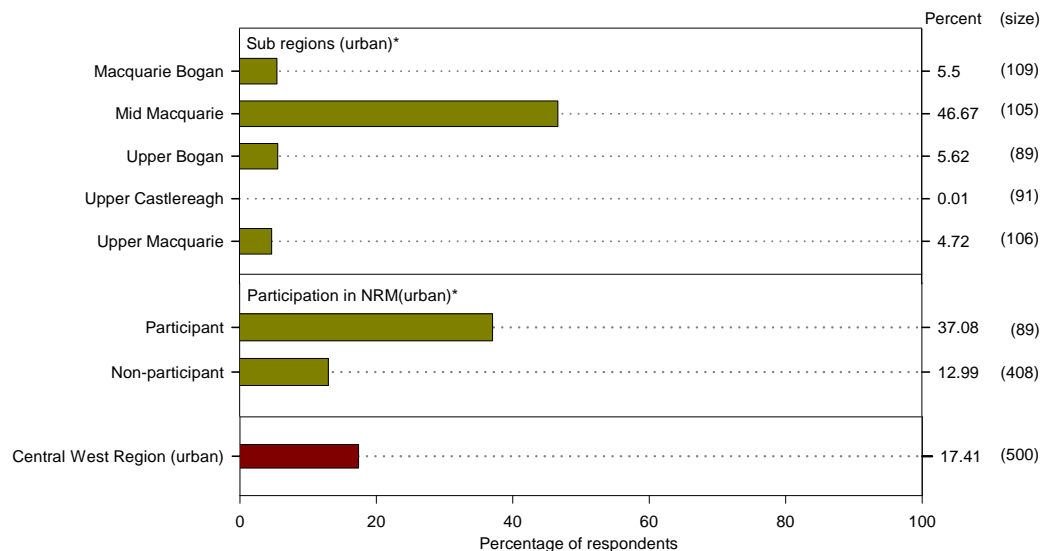
Figure 53 Invasive native scrub: Beliefs about occurrence amongst urban residents



6.5.16 The Management of Waste or Effluent

The management of waste or effluent was reported by 47% of urban residents in the Mid Macquarie subregion, with less than 6% of urban residents reporting this issue in other subregions (Figure 54). Those urban residents who had participated in NRM activities were also more likely to identify this issue than those who had not participated in NRM activities.

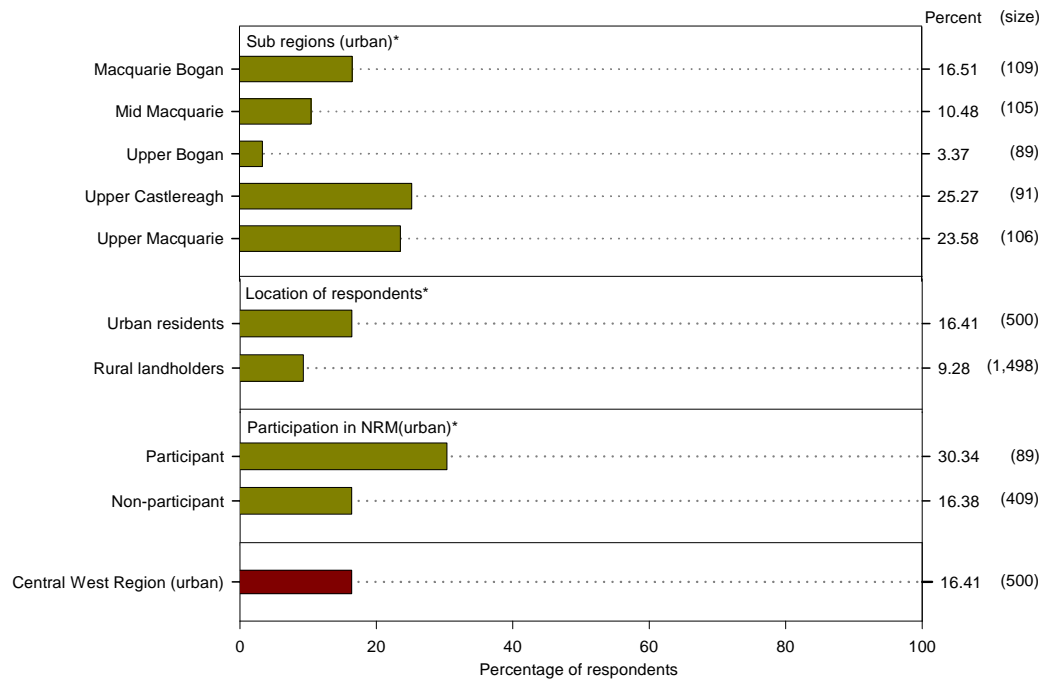
Figure 54 Management of waste or effluent: Beliefs about occurrence amongst urban residents



6.5.17 Poor Quality Surface Water

Poor quality surface water tended to be more commonly reported amongst urban residents in the Upper Castlereagh and Upper Macquarie subregions (Figure 55).

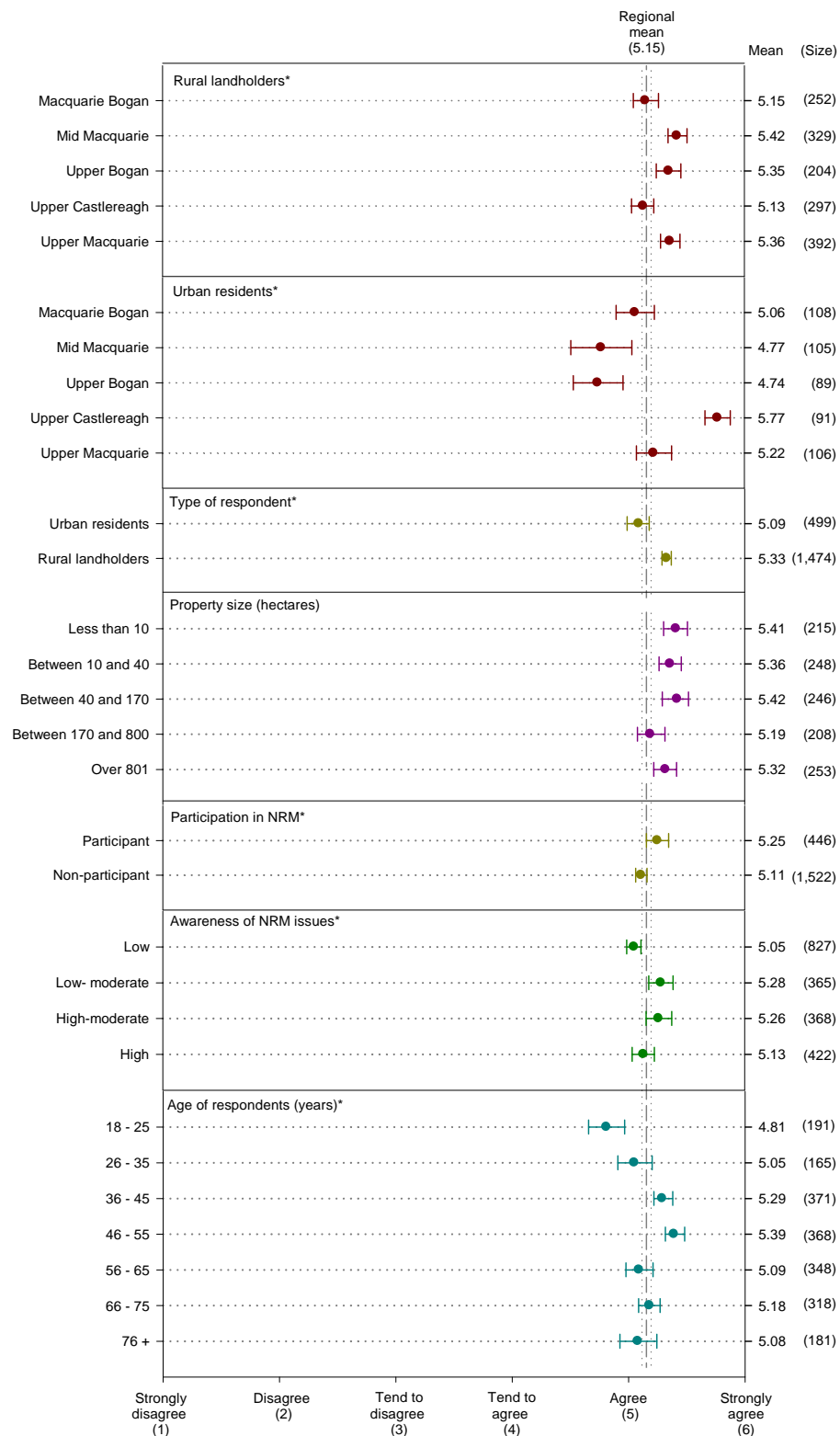
Figure 55 Poor quality surface water: Beliefs about occurrence amongst urban residents



6.6 Beliefs about Water Efficiency and Use

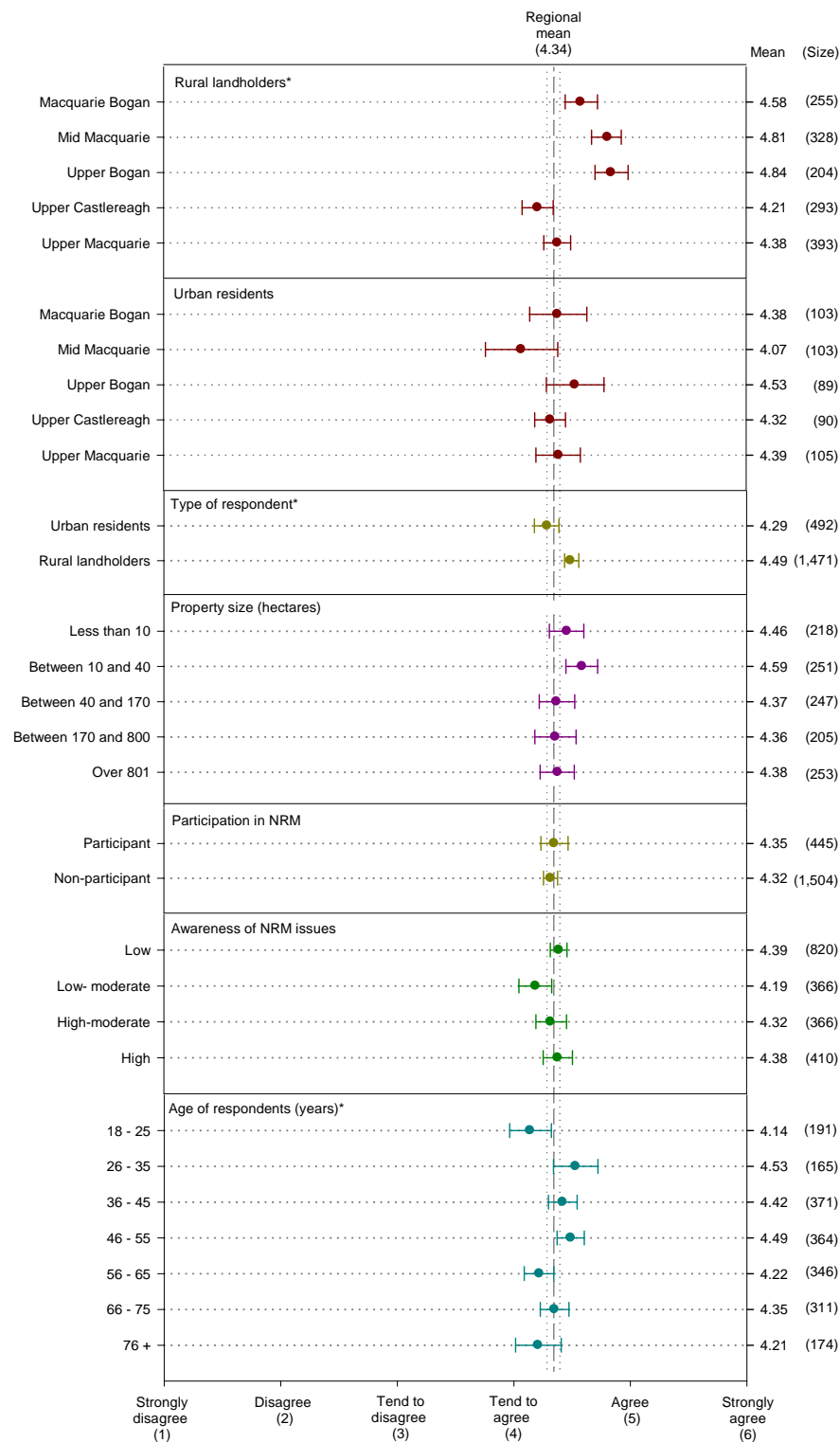
Figure 56 shows that across the region the majority of respondents believed more could be done to improve the efficiency of water use in urban areas. Support for this belief was highest amongst landholders; urban residents from the Upper Castlereagh subregion and those respondents of middle age (36 to 55 years of age).

Figure 56 “A lot more can be done to improve the efficiency of water use in urban areas”



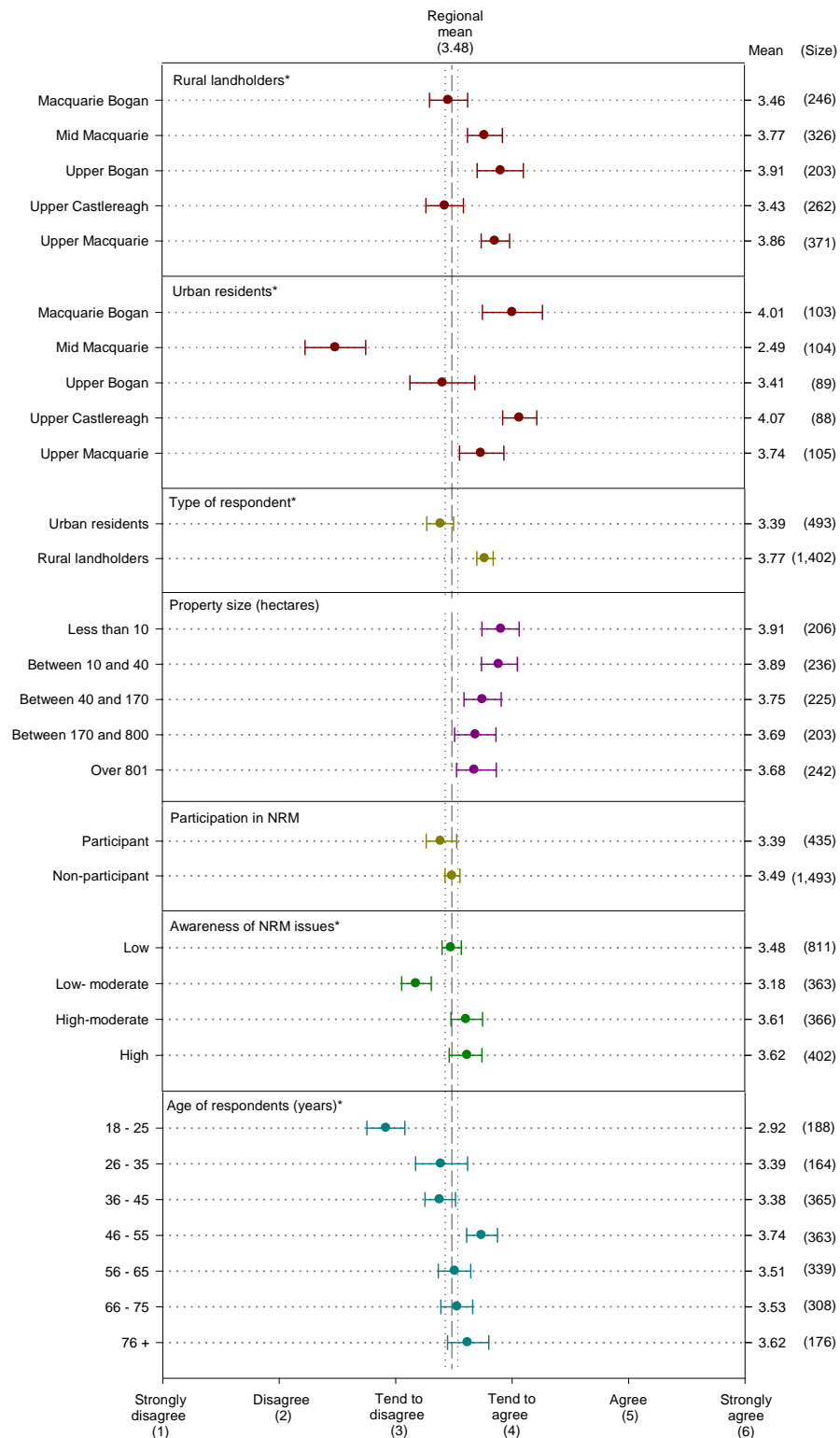
As shown in Figure 57, the majority of respondents believed that the efficiency of water use on most farms could be improved. Support for this belief was highest amongst rural landholders and specifically those landholders in the Upper Bogan and Mid Macquarie subregions.

Figure 57 “A lot more can be done to improve the efficiency of water use on most farms”



The belief that more water should be allocated to the environment produced somewhat mixed support with only half of all respondents supporting this belief (Figure 58). Interestingly landholders were more likely to support this belief than urban residents. However, this appears to be affected low support for this belief amongst urban residents in the Mid Macquarie and Upper Bogan subregions. As shown in Figure 58, there also appears to be greater support for this belief amongst older respondents.

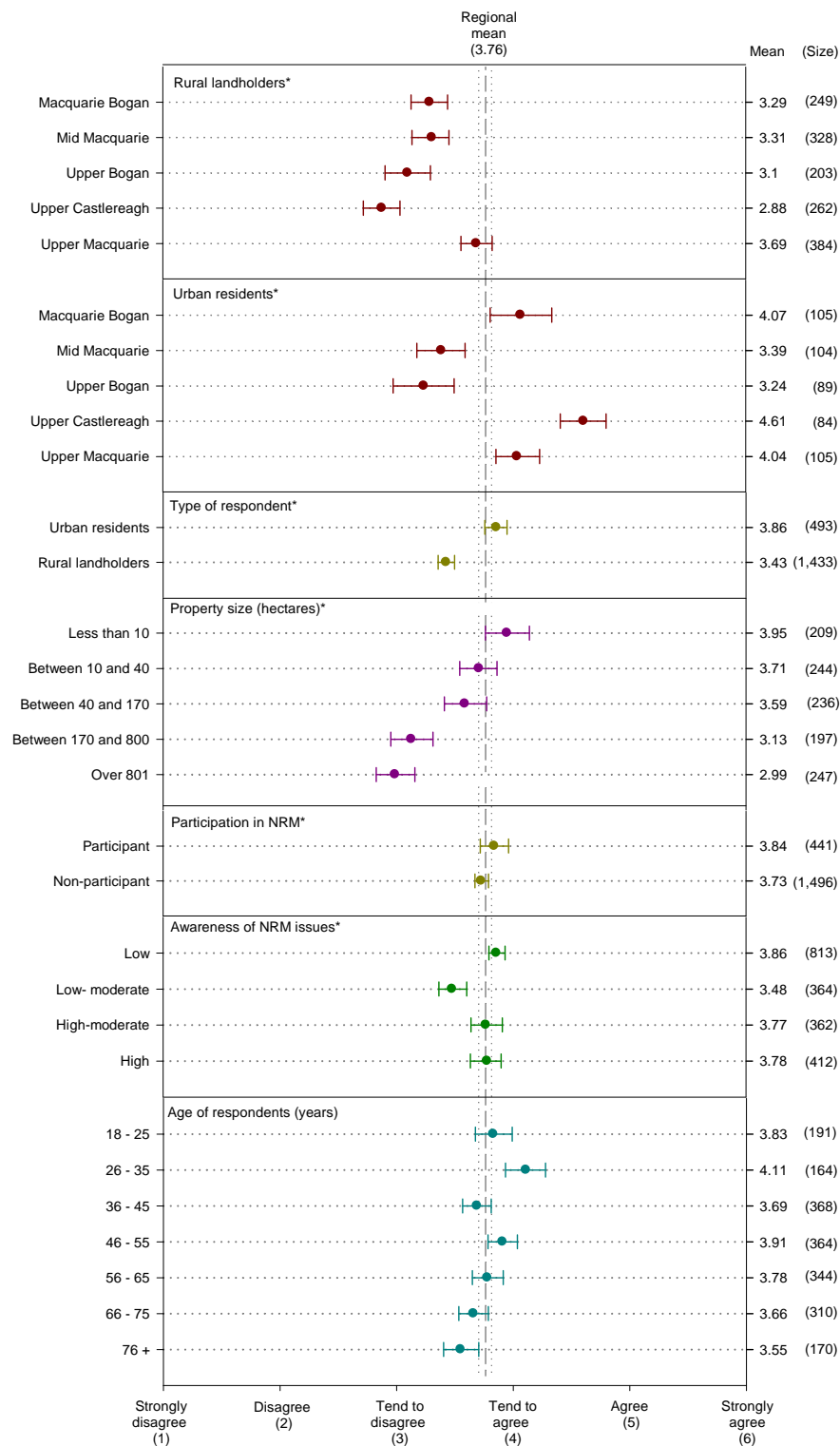
Figure 58 “More water should be allocated to the environment in this area”



6.7 Beliefs about Native Vegetation and Biodiversity

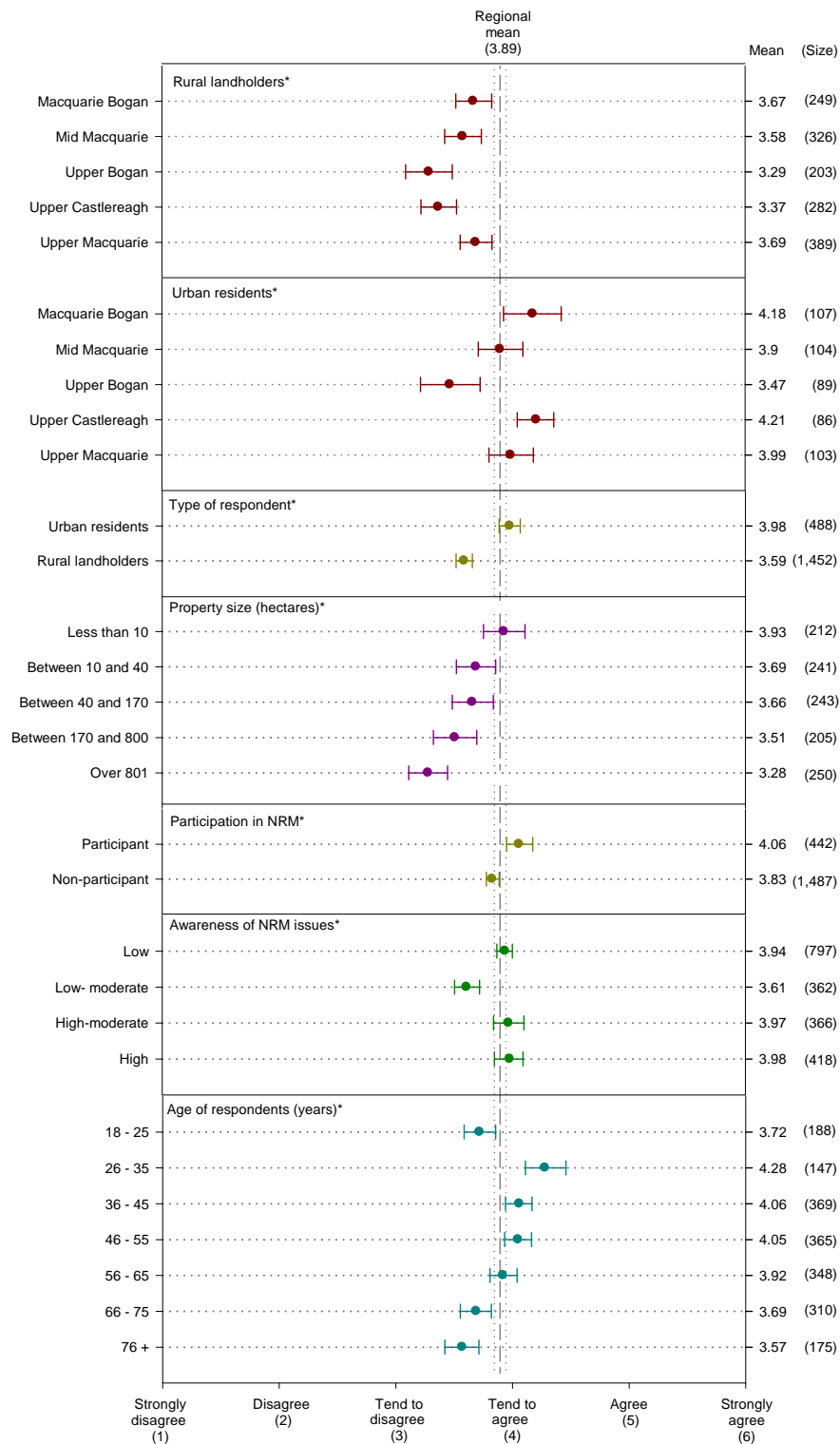
Figure 59 shows significant variation amongst respondents in beliefs about whether the amount of native vegetation set aside for conservation is too low. Urban residents, particularly those in the Upper Castlereagh subregion, tend to support this belief. In contrast landholders, and again those in the Upper Castlereagh are less likely to support the belief. Figure 59 also shows that landholders on smaller as compared to larger properties are also more likely to support this belief.

Figure 59 “The amount of native vegetation put aside for nature conservation in this region is too low”



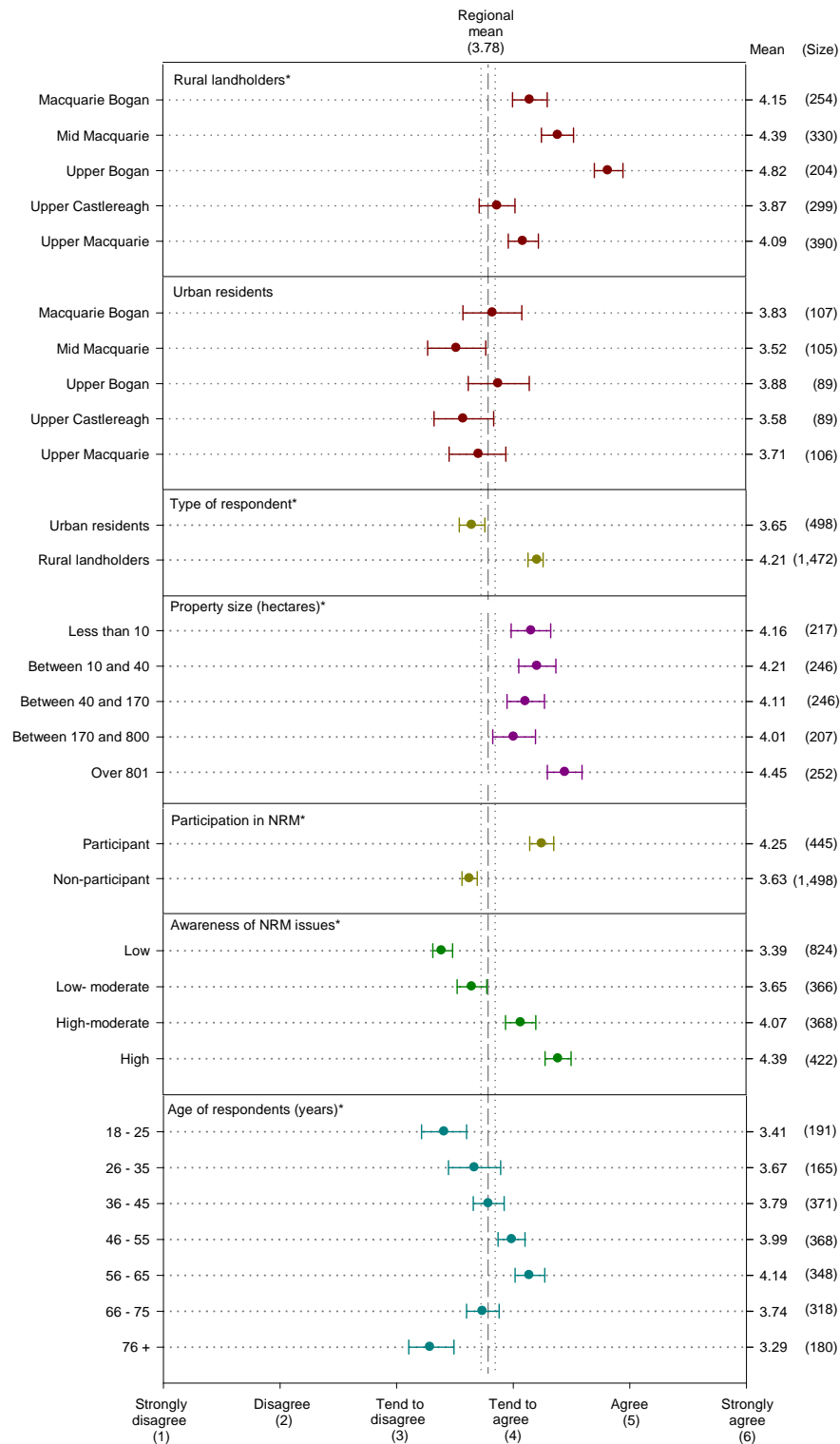
Across all respondents in the region there was agreement that the health and condition of native vegetation was declining. However, relatively more support for this belief was found amongst urban residents; younger residents and landholders on smaller properties. There was less support for this belief amongst landholders and urban residents in the Upper Bogan, with most support occurring amongst urban residents and landholders in the Macquarie Bogan and Upper Macquarie subregions.

Figure 60 “I think the health and condition of native vegetation in the region is declining”



Although only a self evaluation, an understanding of biodiversity was highest amongst rural landholders; amongst those who had participated in NRM activities; and amongst those with a greater awareness of NRM issues. In addition, relatively younger and older respondents indicated they had less knowledge of biodiversity than those respondents of middle age (36-65 years).

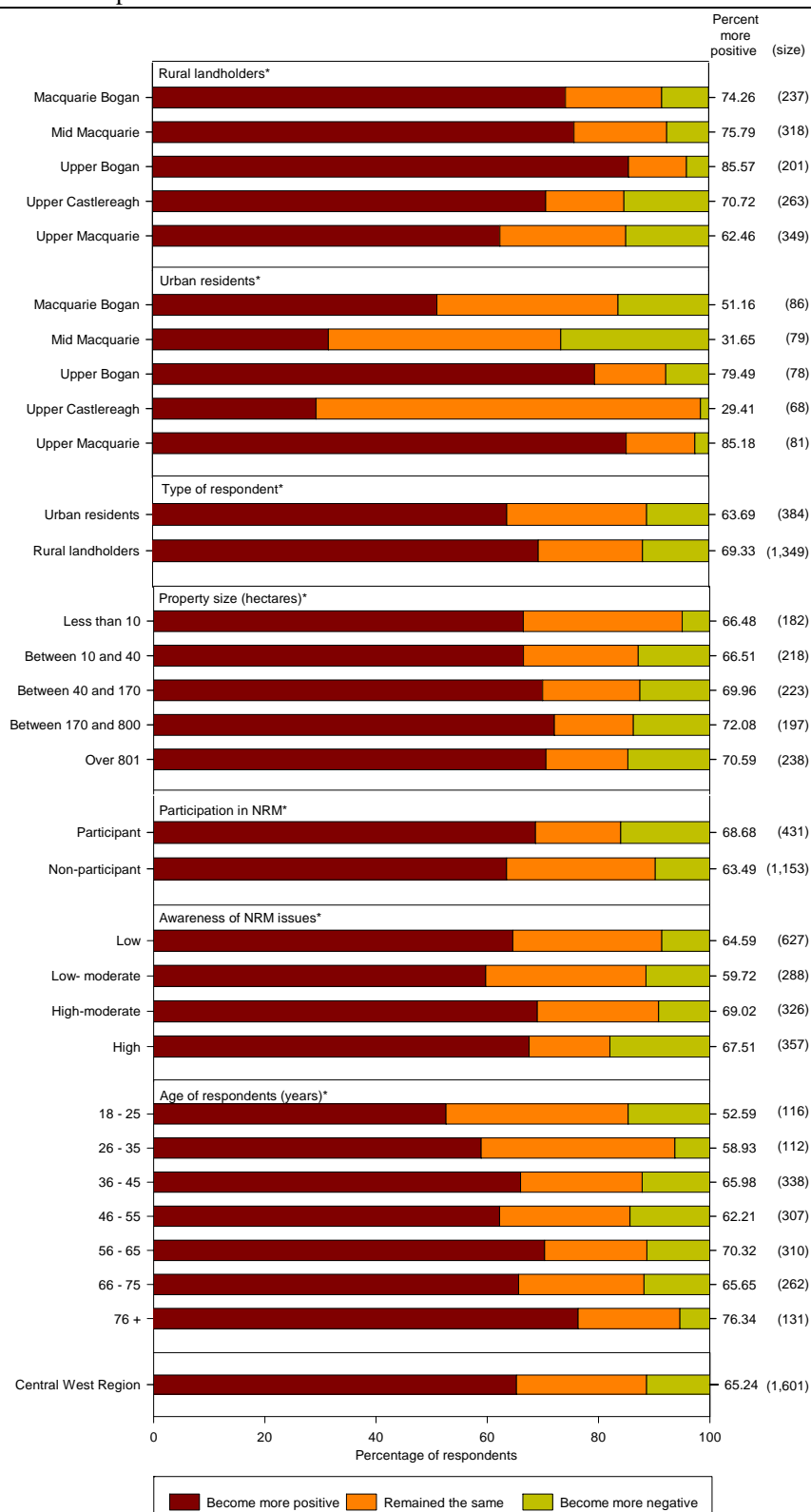
Figure 61 “I have a good understanding of what is meant by biodiversity”



6.8 Attitudes towards Farming Practices

Amongst all residents within the region, 65% believed that community attitudes towards farming practices that minimize impacts had become more positive in the last two years (Figure 62). This belief was highest amongst landholders; amongst urban residents in the Upper Bogan and Macquarie subregions and amongst older residents.

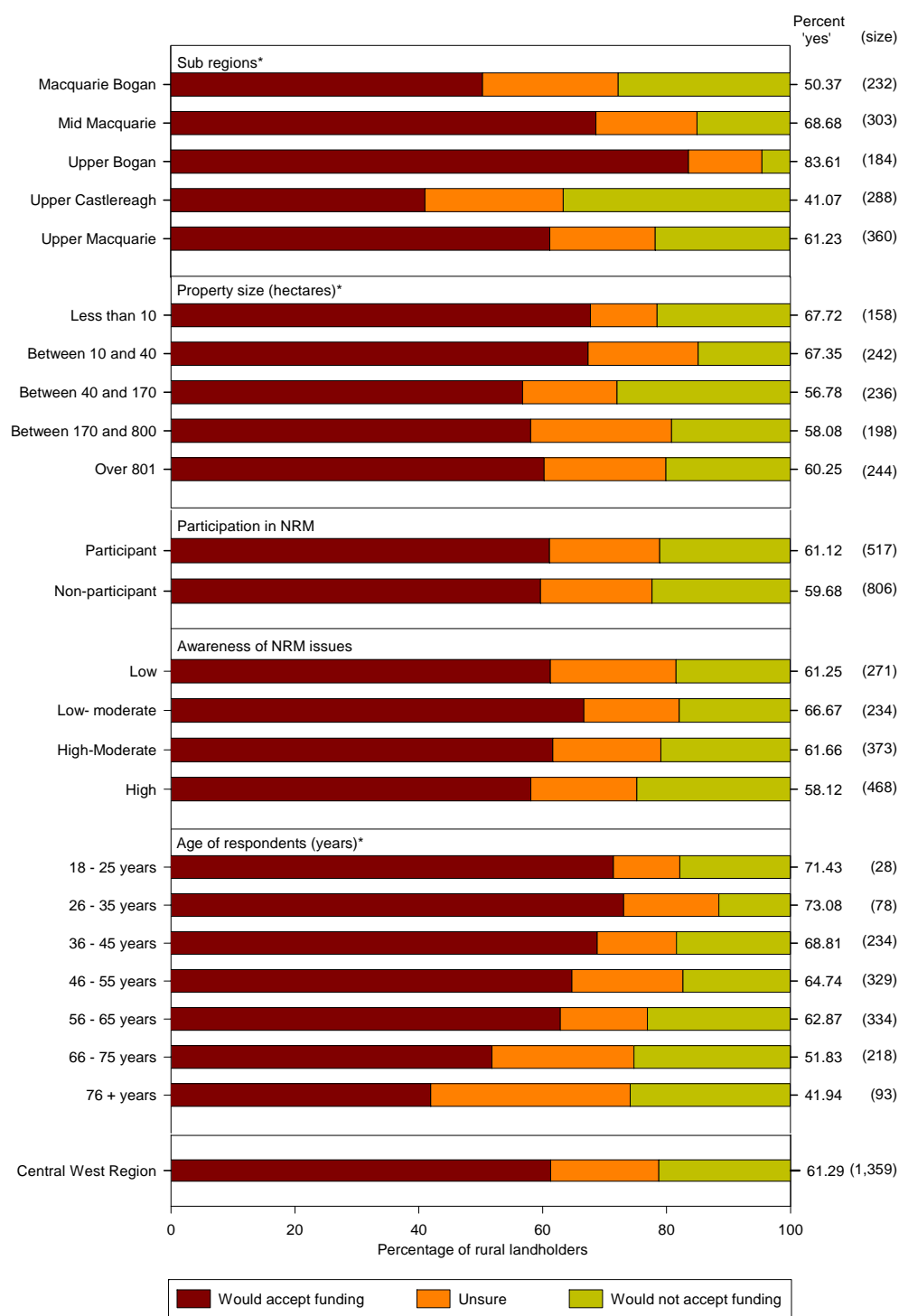
Figure 62 “Over the past two years do you think community attitudes towards farming practices that minimise impacts on the environment have...?”



7. CULTURAL HERITAGE

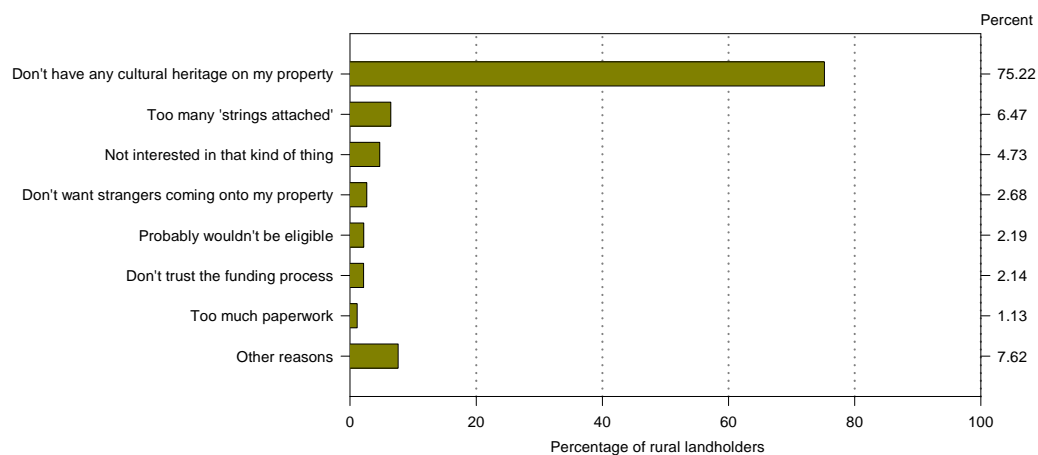
Amongst landholders within the region, 61% indicated a willingness to accept funding or assistance to protect cultural heritage on their property (Figure 63). The willingness to accept funding or assistance was highest amongst younger landholders and those on smaller properties of less than 40 hectares. Landholders in the Upper Bogan were most willing to accept funding or assistance to protect cultural heritage (84%).

Figure 63 “If you were offered funding or other assistance to protect cultural heritage on your property would you take it up?” (Rural landholders only)



Not accepting funding or assistance to protect cultural heritage as shown in Figure 63 was primarily due to the belief amongst landholders that they did not have cultural heritage on their property (Figure 64). While this was the primary reason given by the majority of landholders, approximately 25% of landholders also raised procedural issues related to the funding process and issues related to property access.

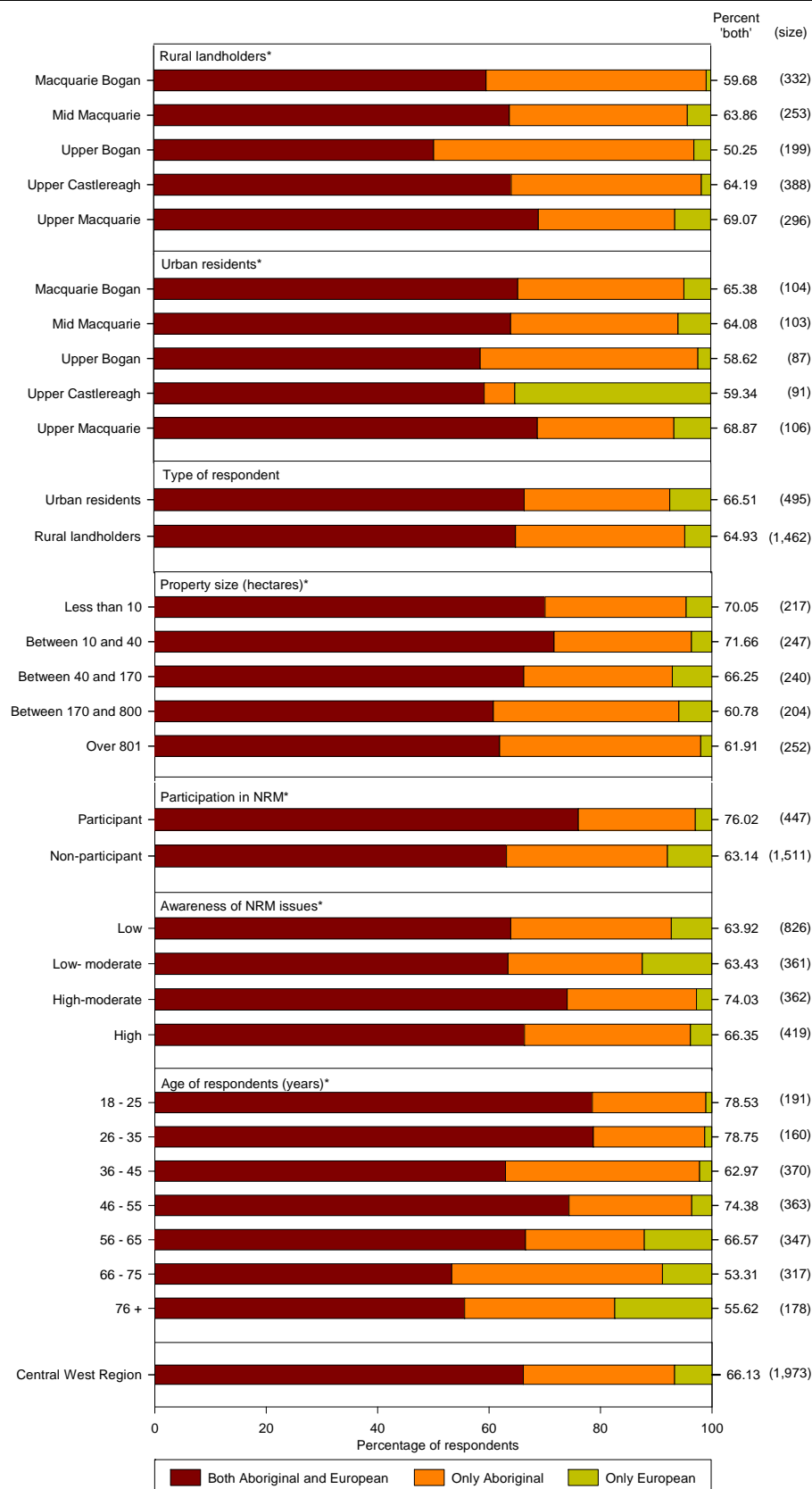
Figure 64 Reasons for not accepting assistance to protect cultural heritage (Rural landholders)



Note: In responding to this question a respondent may have had multiple responses. As a respondent may appear in more than one row of the graph and as such the row percentages should not be summed.

Figure 65 shows that for the majority of residents in the region (66%), cultural heritage signified both Aboriginal and European heritage. This belief was held more so amongst younger as compared to older residents.

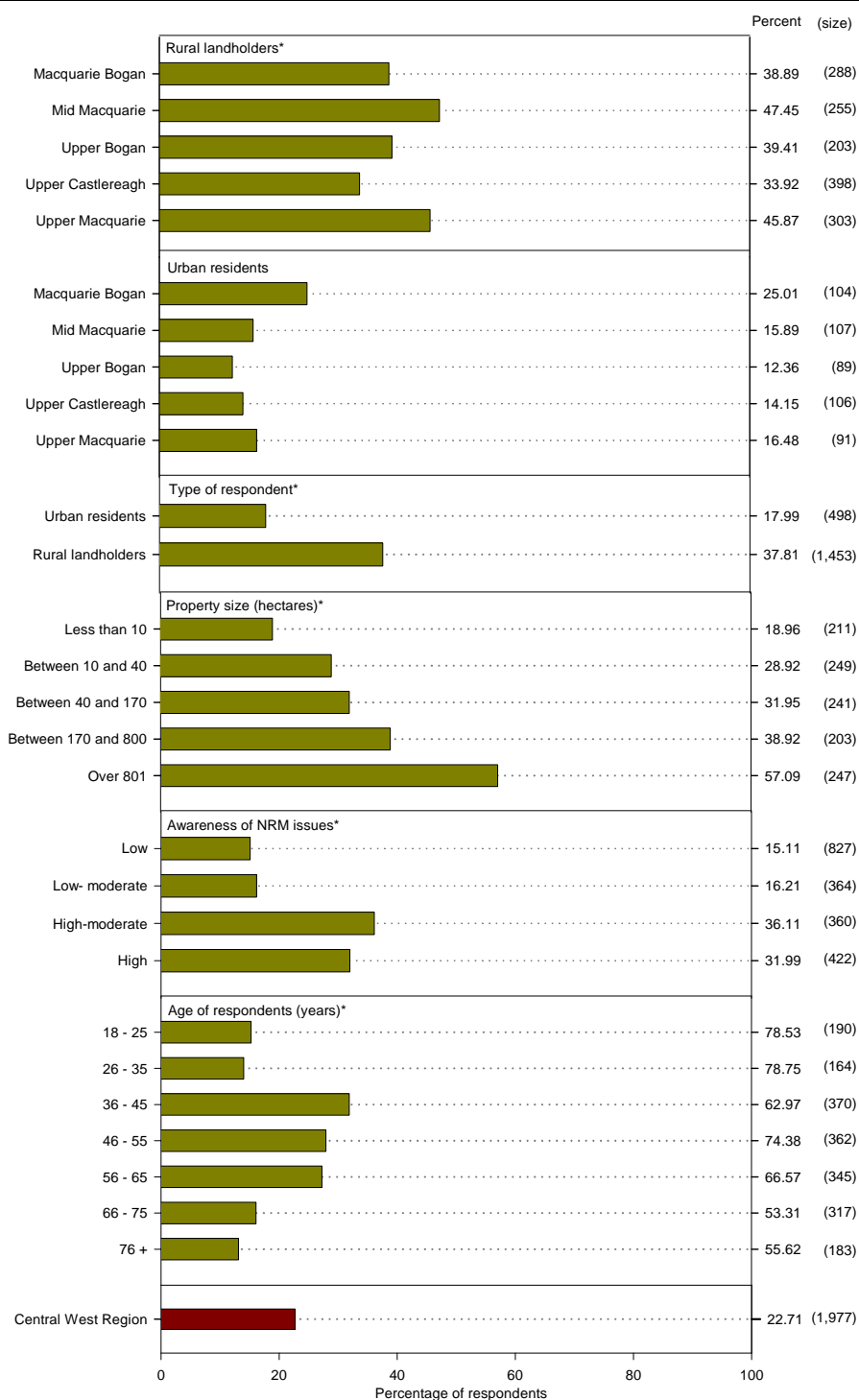
Figure 65 “These days when people talk about ‘cultural heritage’, what do you think they are most commonly referring to...”



8. COMMUNITY ENGAGEMENT

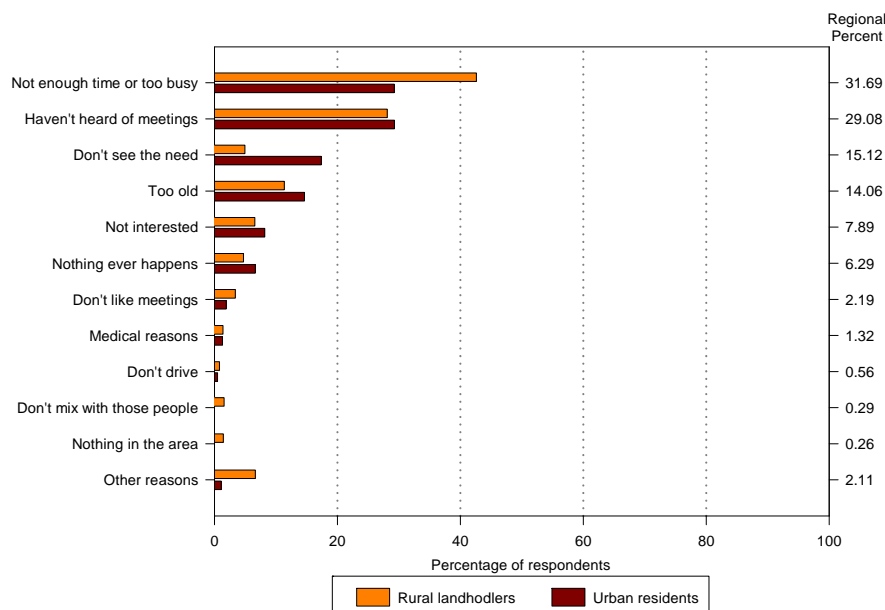
Across the region, 23% of respondents indicated they had participated in organised NRM meetings or activities (Figure 66). Participation in organised NRM meetings or activities, including Landcare, was highest amongst landholders when compared to urban residents and increased amongst landholders on larger properties. As shown in Figure 66, participation was also highest amongst the middle age (36 to 65 years) and lowest amongst both the younger and older respondents.

Figure 66 “In the last two years have you participated in any organised meetings or activities about environmental issues or the management of natural resources in your local area, such as Landcare?”



As shown in Figure 67, the two most commonly reported reasons for not participating in organised NRM meetings or activities were that there was ‘not enough time or too busy’ (32%) or that they were not aware of meetings and activities occurring in their area (29%).

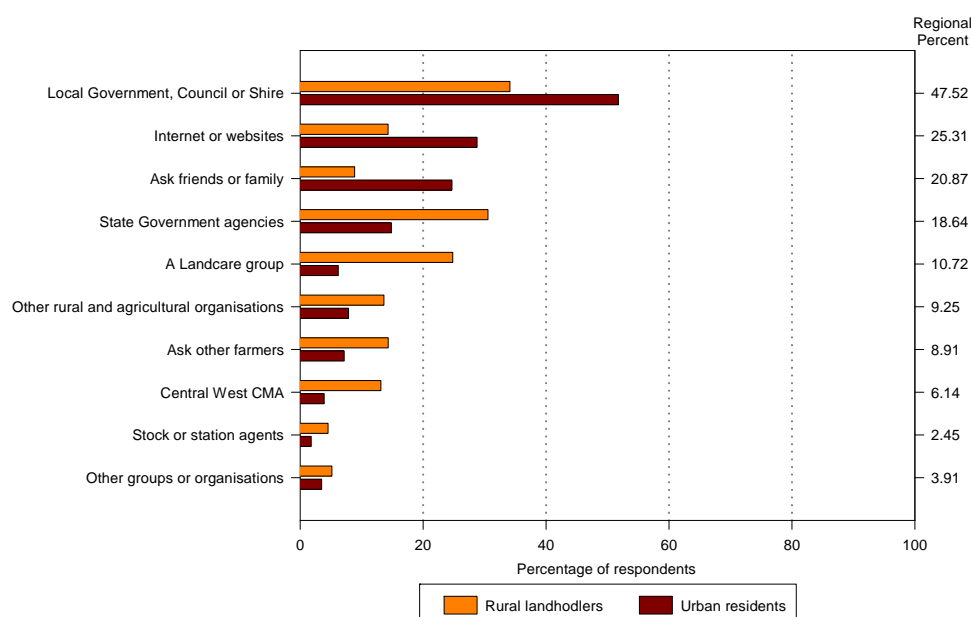
Figure 67 Reasons for not participating in organised meetings or activities about environmental issues or the management of natural resources



Note: In responding to this question a respondent may have had multiple responses. As a respondent may appear in more than one row of the graph and as such the row percentages should not be summed.

Figure 68 shows that amongst landholders the three most important sources of information on environmental issues were Local Government, State Government agencies and Landcare. In contrast amongst urban residents the three most important sources of information on environmental issues were Local Government, the internet and friends or family.

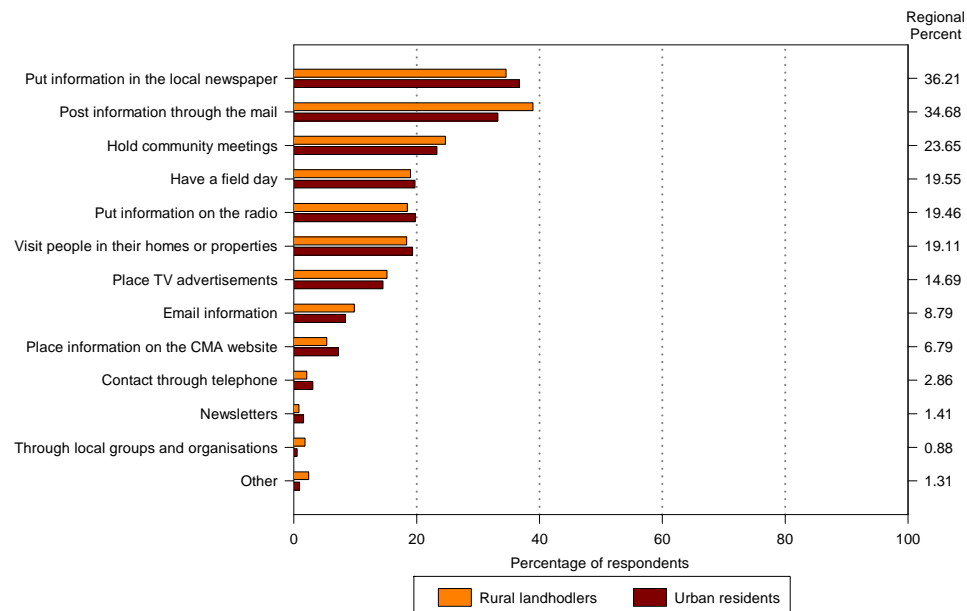
Figure 68 “If you wanted to know something about an environmental issue on your land or in your local area, where would you go to get this information?”



Note: In responding to this question a respondent may have had multiple responses. As a respondent may appear in more than one row of the graph and as such the row percentages should not be summed.

Figure 69 shows the most preferred methods through residents believed the Central West CMA should communicate. The two most preferred communication methods across all respondents were to inform people through local newspapers (36%) and mail information to them (35%).

Figure 69 “The CMA is responsible for the management of natural resource in the region. If the CMA wanted to communicate information to people in your local area, what do you think would be the best way for the CMA to do this?”



Note: In responding to this question a respondent may have had multiple responses. As a respondent may appear in more than one row of the graph and as such the row percentages should not be summed.

9. ATTITUDES AND BELIEFS ABOUT THE CENTRAL WEST CMA

The assessment of community attitudes and beliefs about the Central West CMA focused on

- (i) awareness and knowledge of the CMA;
- (ii) involvement with the CMA;
- (iii) beliefs about the role of the CMA and
- (iv) the evaluation of the CMA.

9.1 Awareness and Knowledge of the CMA

Figure 70 shows that across all residents in the region, 33% were aware of the CMA. Those who had heard of the CMA were more likely to be landholders as compared to urban residents and amongst landholders it was generally those landholders who had larger properties and who lived in the Mid Macquarie, Upper Bogan and Upper Castlereagh subregions. Interestingly, amongst urban residents there were very few (4%) in the Upper Castlereagh region that were aware of the CMA.

Across all residents in the region and as might be expected, it was also those who had participated in NRM activities and those that had a high awareness of NRM issues that were also more likely to be aware of the CMA. With the exception of the 18 to 25 year age group, it was those between 46 and 75 years of age who were most likely to be aware of the CMA.

Figure 70 “Have you heard of the Central West Catchment Management Authority or CMA?”

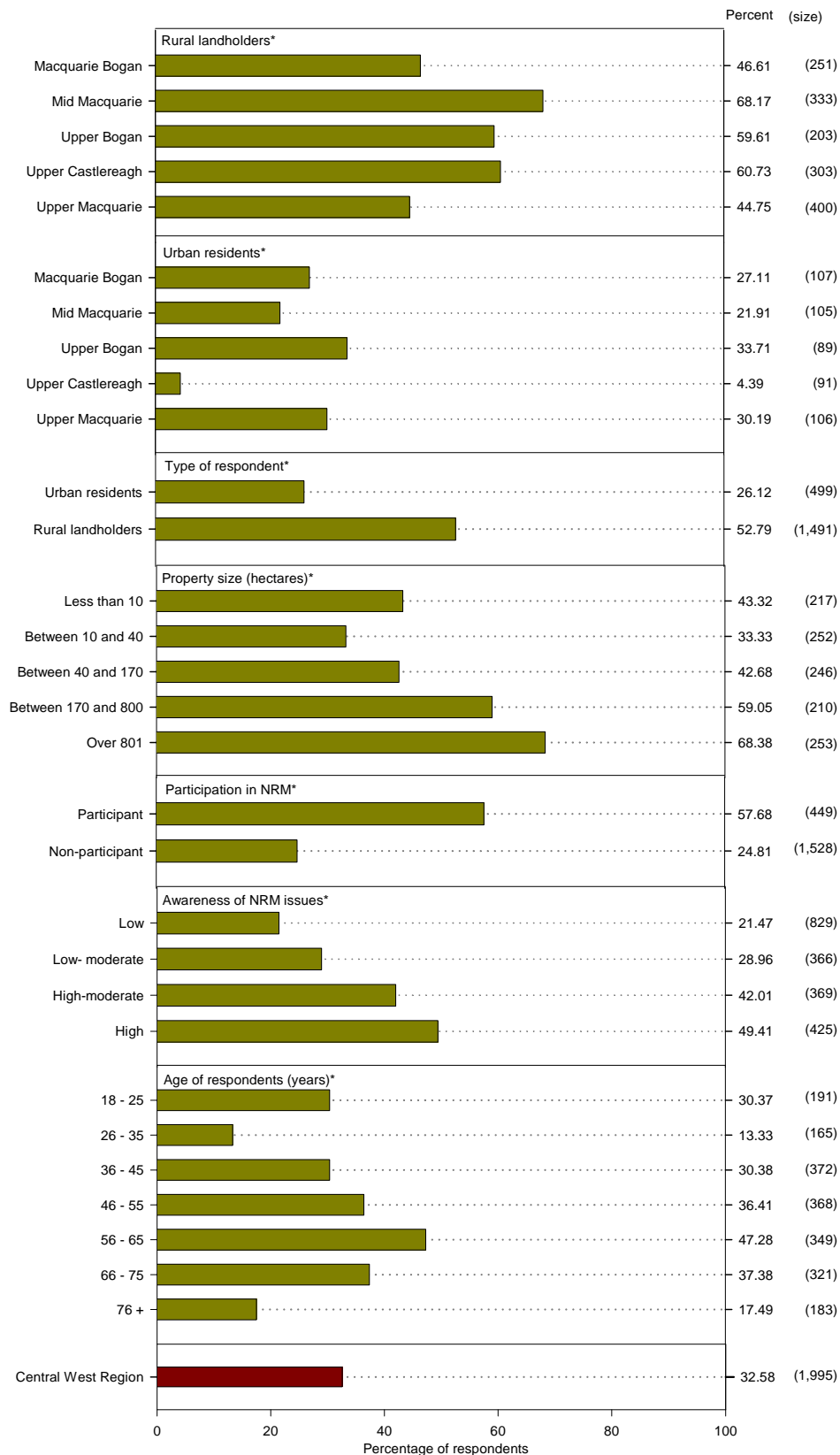
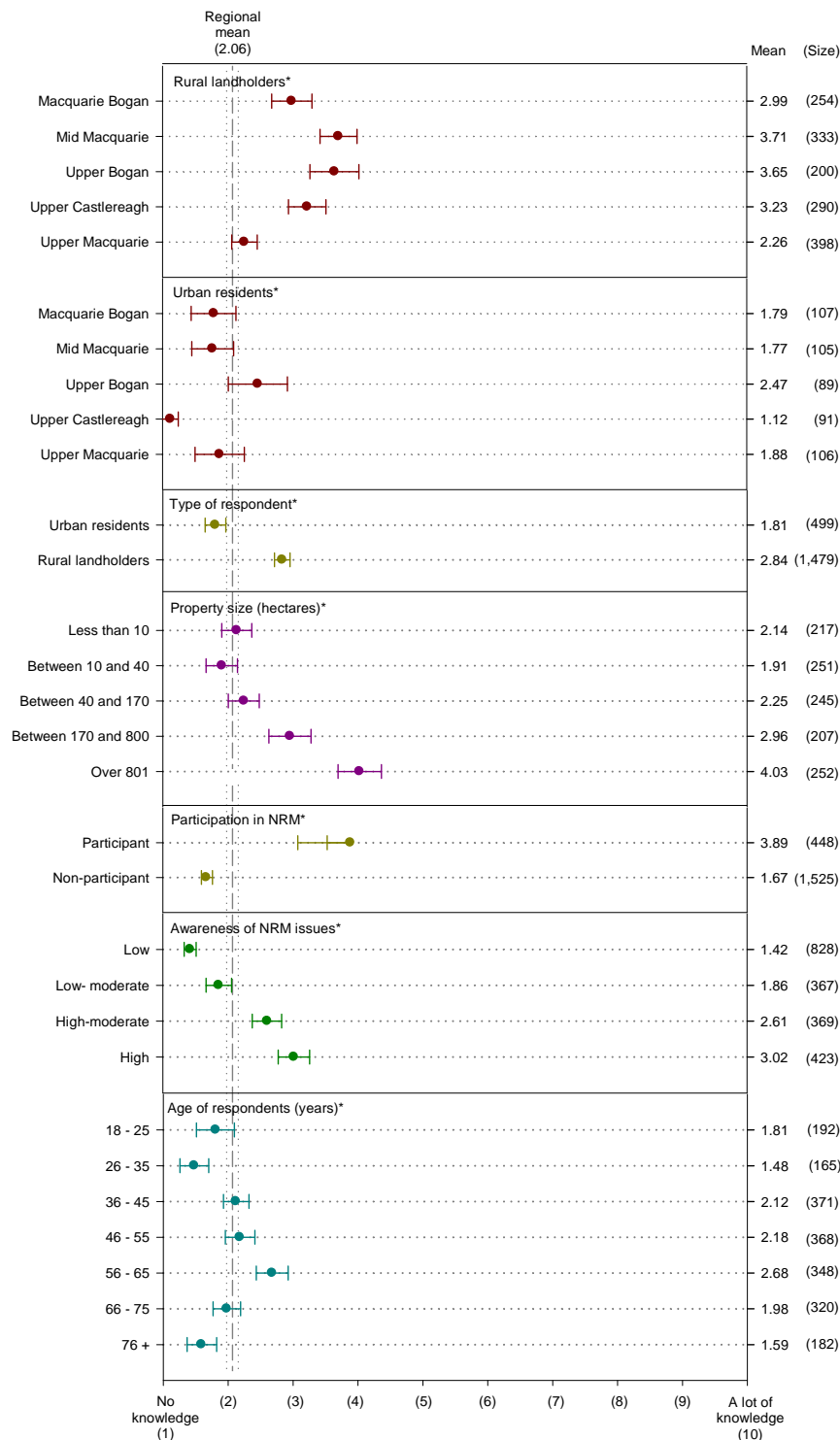


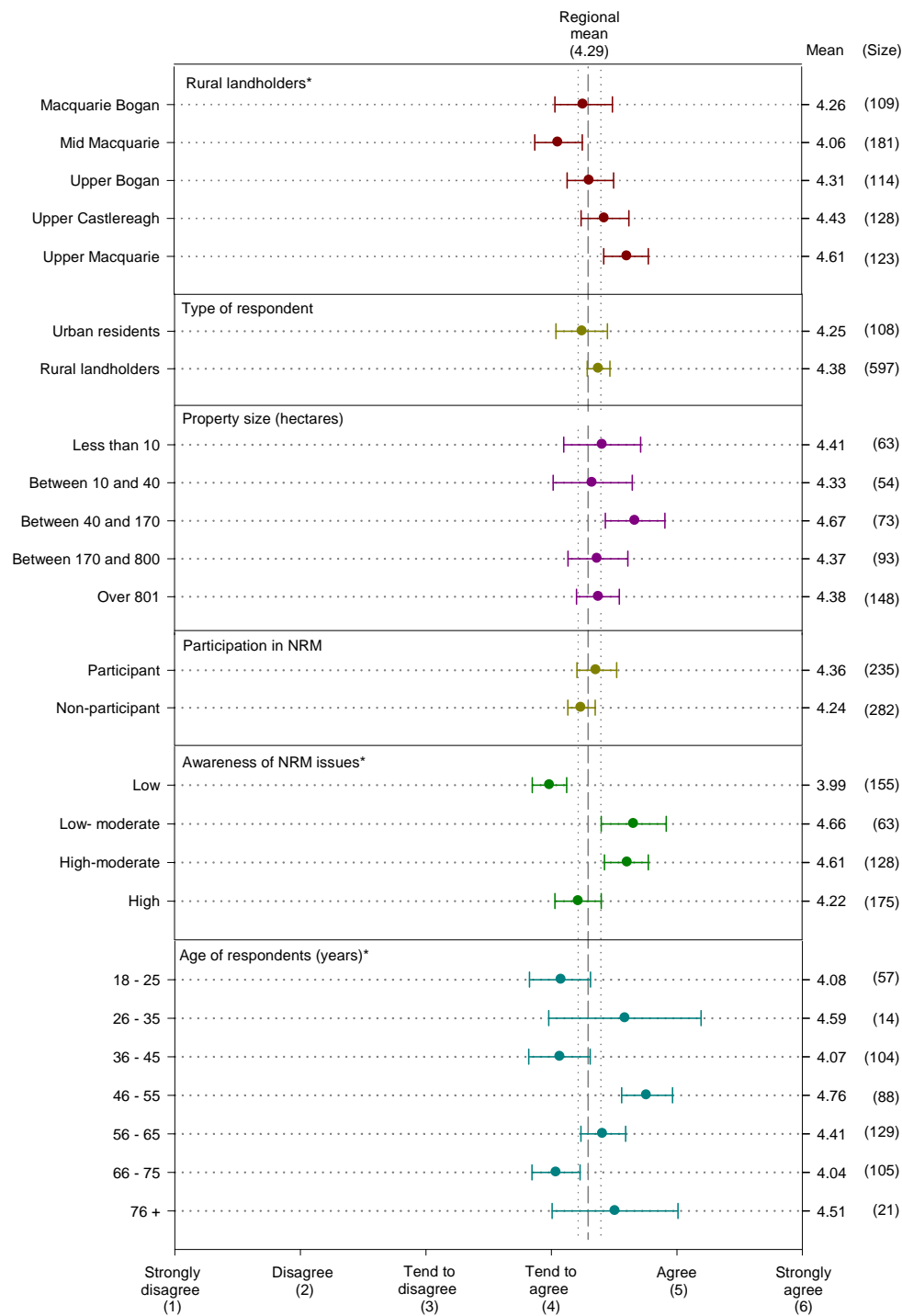
Figure 71 shows the level of knowledge of the CMA across all respondents to be relatively low. This analysis also shows landholders are more knowledgeable than urban residents; participation in NRM activities is associated with greater knowledge of the CMA and increasing awareness of NRM issues is also associated with increasing knowledge of the CMA. Amongst landholders, those on larger properties were more knowledgeable of the CMA and amongst all respondents; it was those of middle age who were also relatively more knowledgeable of the CMA.

Figure 71 “If you were to give yourself a score from one to ten in relation to your knowledge of the Central West Catchment Management Authority, with one (1) being no knowledge at all and ten (10) being all the knowledge anyone could have, what score would you give yourself?”



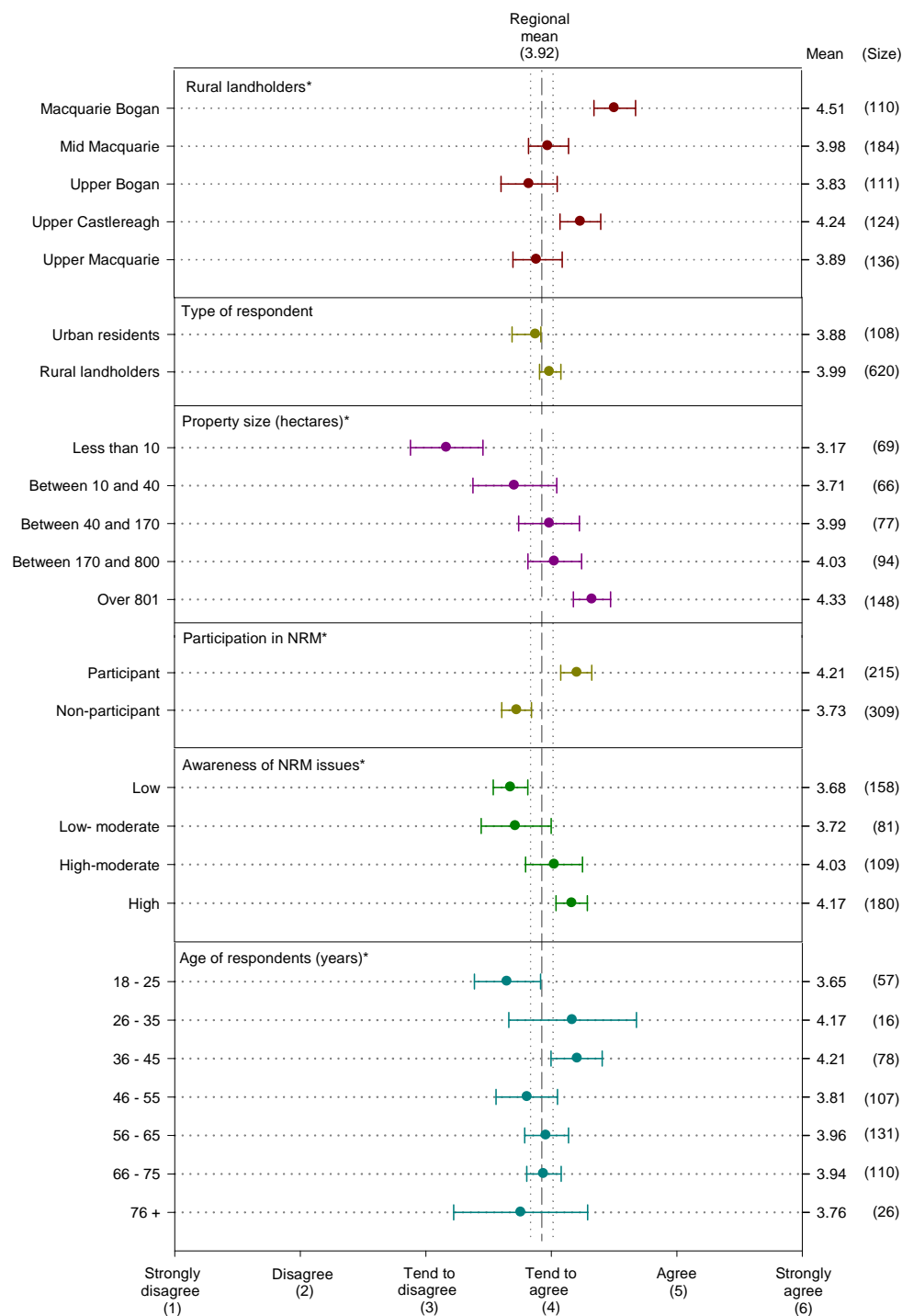
As indicated in Figure 72 the majority of respondents in the region agreed with the belief that the CMA was a Government department. This belief was highest amongst landholders in the Upper Castlereagh and Macquarie subregions.

Figure 72 “The CMA is a Government department.”
(Excludes respondents who were not aware of the CMA. Due to low sample sizes it also excludes urban residents by subregion)



Amongst those residents in the region who were aware of the CMA, the majority indicated they knew about the CMA and what it did (Figure 73). This belief was highest amongst landholders in the Macquarie Bogan and Upper Castlereagh subregions and amongst those landholders on larger properties.

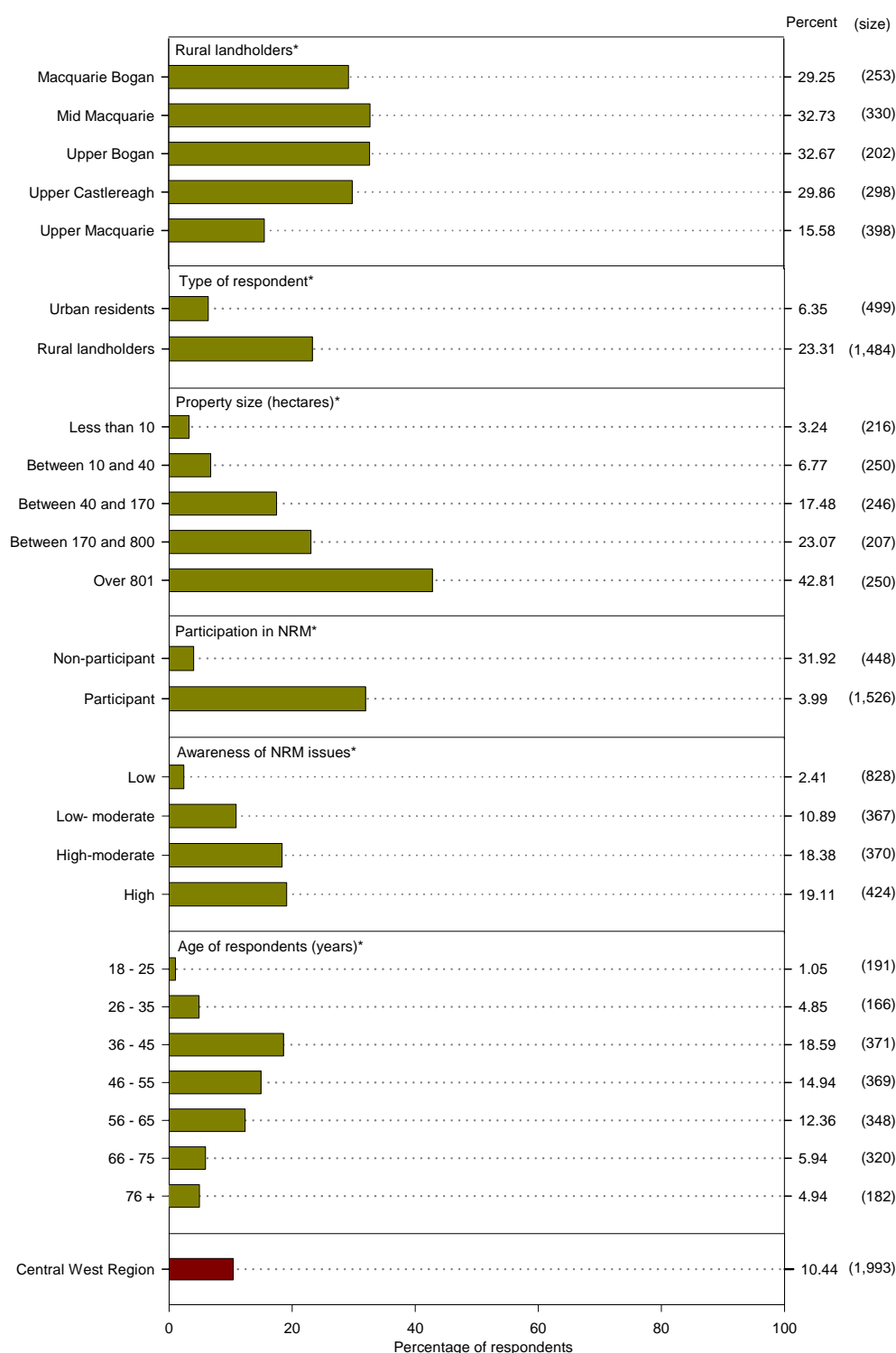
Figure 73 “I would say I know about the CMA and what it does.”
(Excludes respondents who were not aware of the CMA. Due to low sample sizes it also excludes urban residents by subregion)



9.2 Involvement with the CMA

Figure 74 shows that 10% of all respondents indicated they had contact or communication with the CMA. The highest contact was amongst landholders and amongst those landholders with larger properties. The two most commonly reported reasons for contact with the CMA include (i) having ‘attended a meeting organised by the CMA’ (4.1%) and ‘tried to or did obtain funding or incentives through the CMA’ (2.8%).

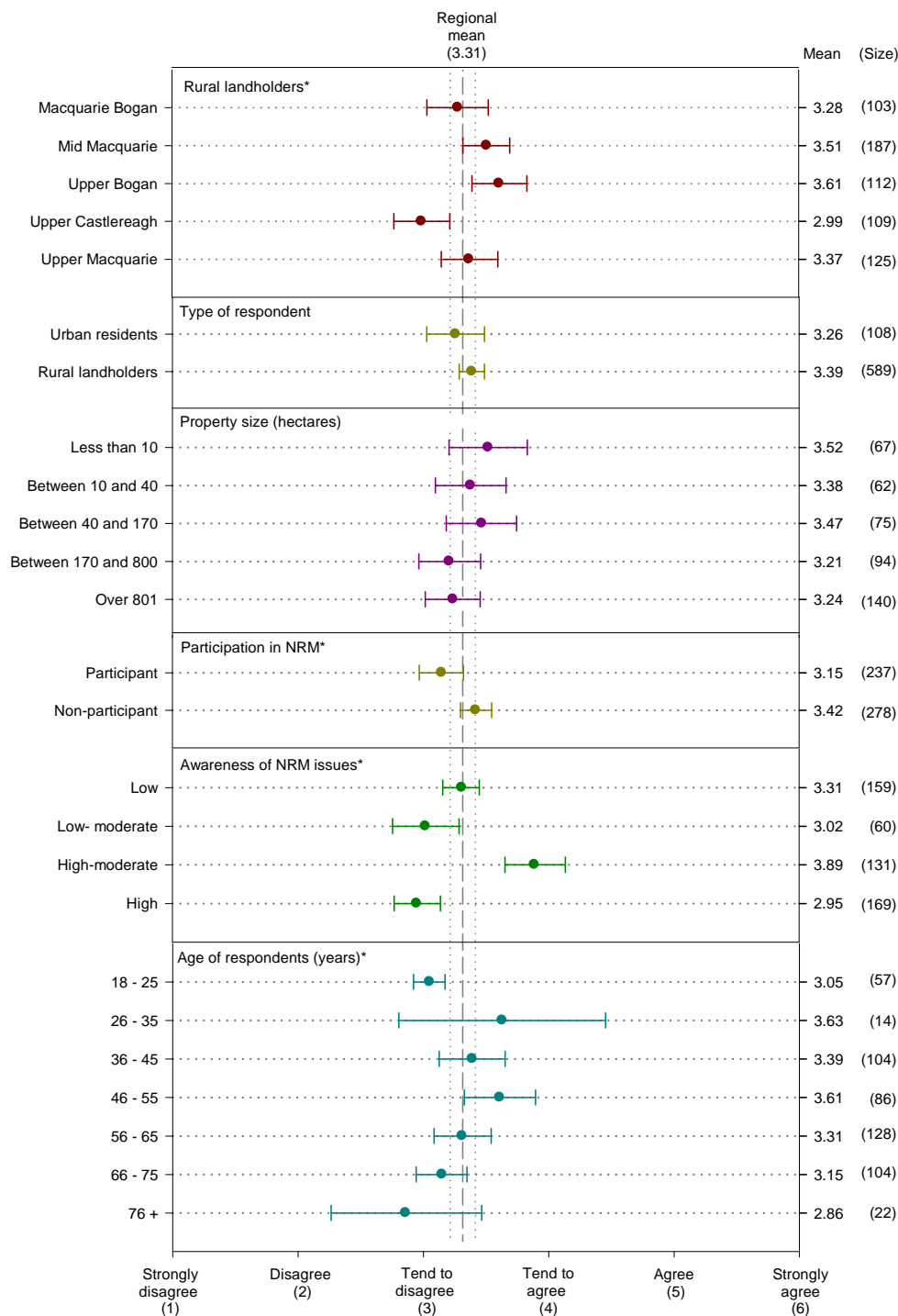
Figure 74 “Have you had any contact or communication with the CMA?”
(Those respondents who were not aware of the CMA were assumed to have had no contact with the CMA. Due to low sample sizes it also excludes urban residents by subregion)



9.3 Beliefs about the Role of the CMA

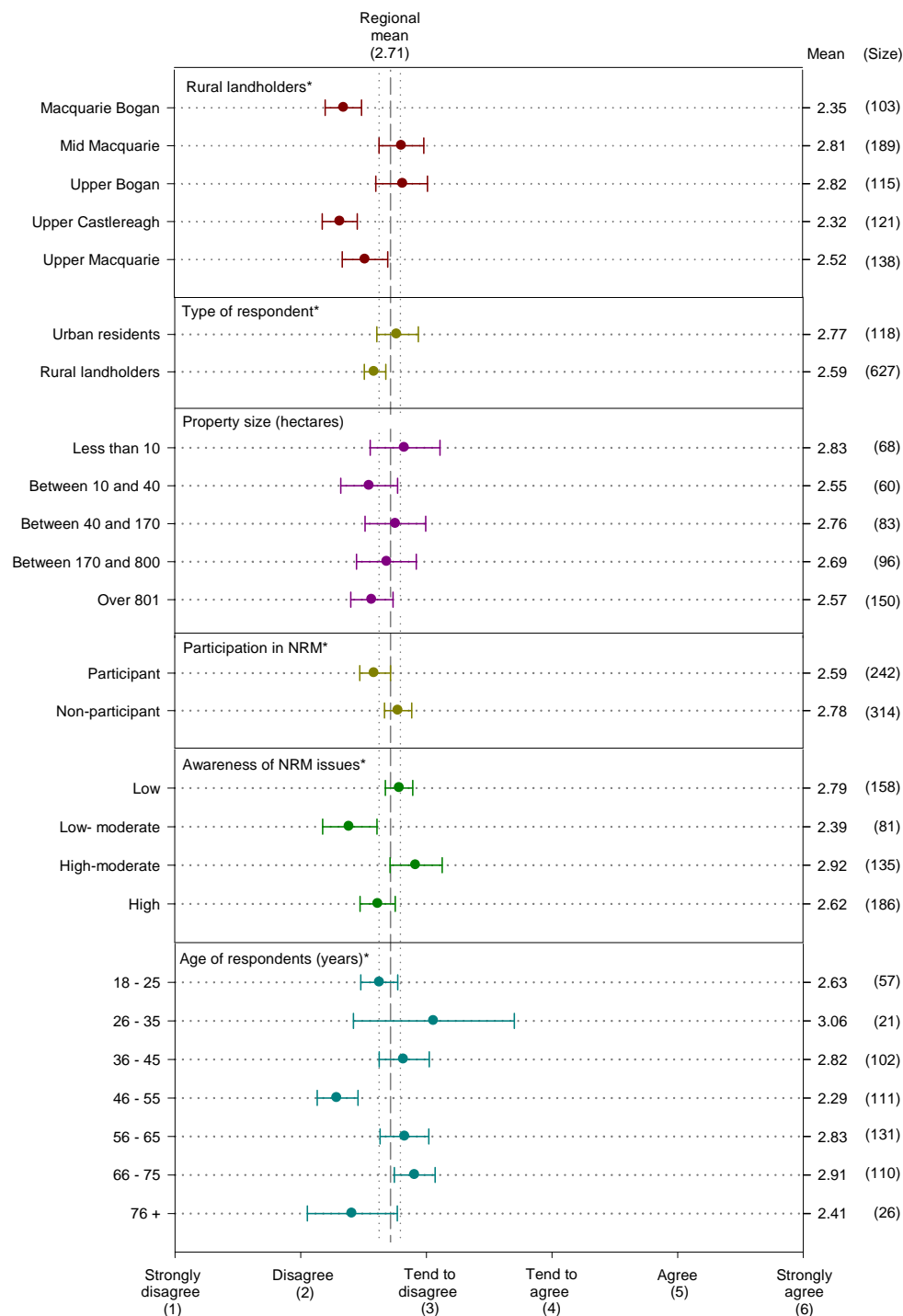
Figure 75 shows that the majority of respondents in the region tended to disagree with the statement that the CMA's primary responsibility was controlling vegetation clearing. Landholders in the Mid Macquarie and Upper Bogan were most likely to hold this belief as were residents between 26 and 55 years of age.

Figure 75 "The CMA is primarily responsible for controlling vegetation clearing"
(Excludes respondents who were not aware of the CMA. Due to low sample sizes it also excludes urban residents by subregion)



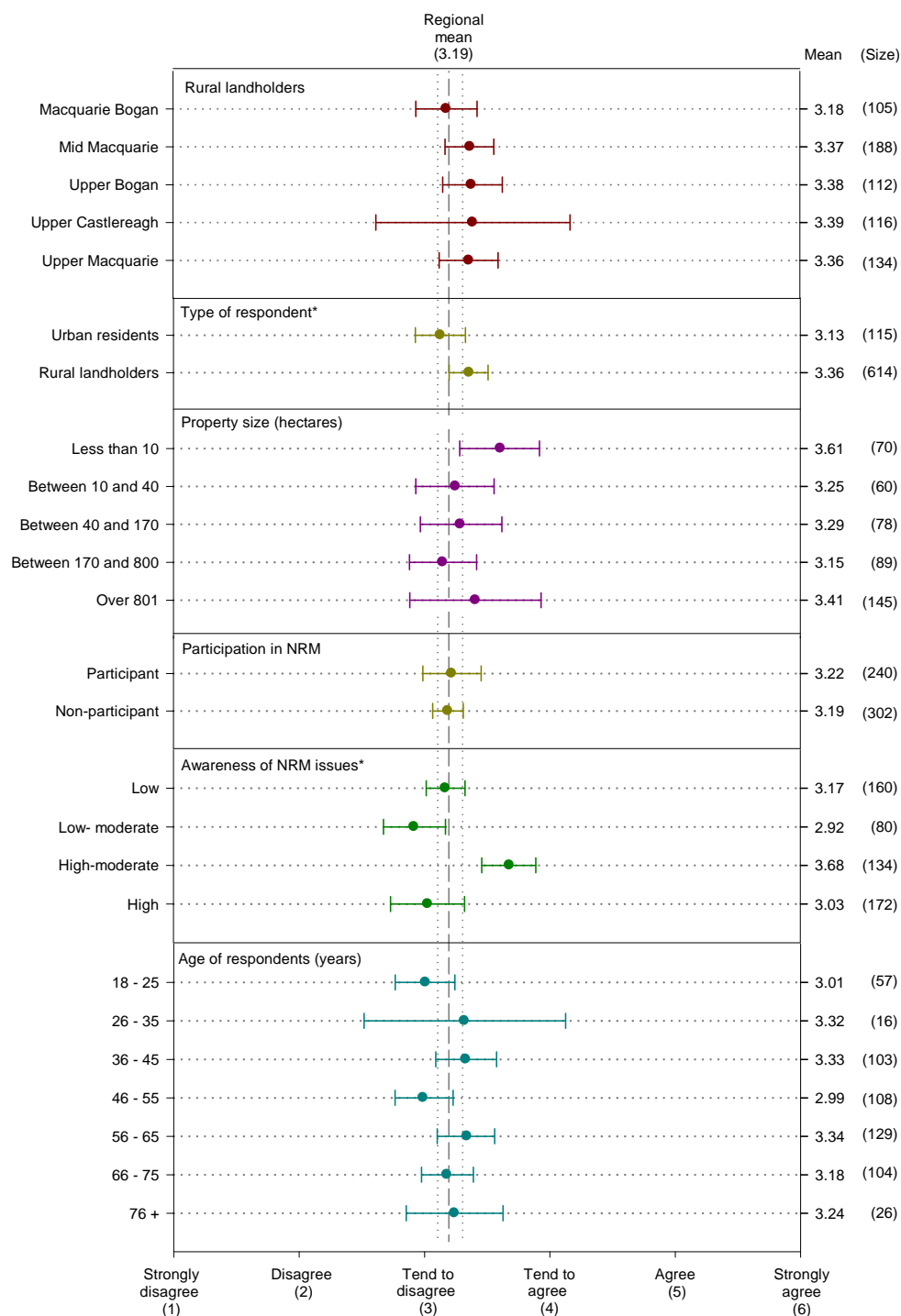
The majority of respondents did not hold the belief that the CMA only worked with farmers (Figure 76). This belief was more likely to be held by urban residents and amongst those who did not participate in NRM activities.

Figure 76 “The CMA only works with farmers”
(Excludes respondents who were not aware of the CMA. Due to low sample sizes it also excludes urban residents by subregion)



Across the region the majority of respondents did not hold the belief that the CMA was primarily responsible for water management (Figure 77). However it was landholders rather than urban residents who were most likely to hold this belief.

Figure 77 “The CMA is primarily responsible for water management”
(Excludes respondents who were not aware of the CMA. Due to low sample sizes it also excludes urban residents by subregion)



9.4 Evaluating the CMA

The majority of residents within the region believed the CMA ‘was doing a good job in the management of natural resources in the region’ (Figure 78). This belief was held more so by landholders than urban residents and was particularly high amongst those over 76 years of age.

Figure 78 “The CMA is doing a good job in the management of natural resources in this region”
(Excludes respondents who were not aware of the CMA. Due to low sample sizes it also excludes urban residents by subregion)

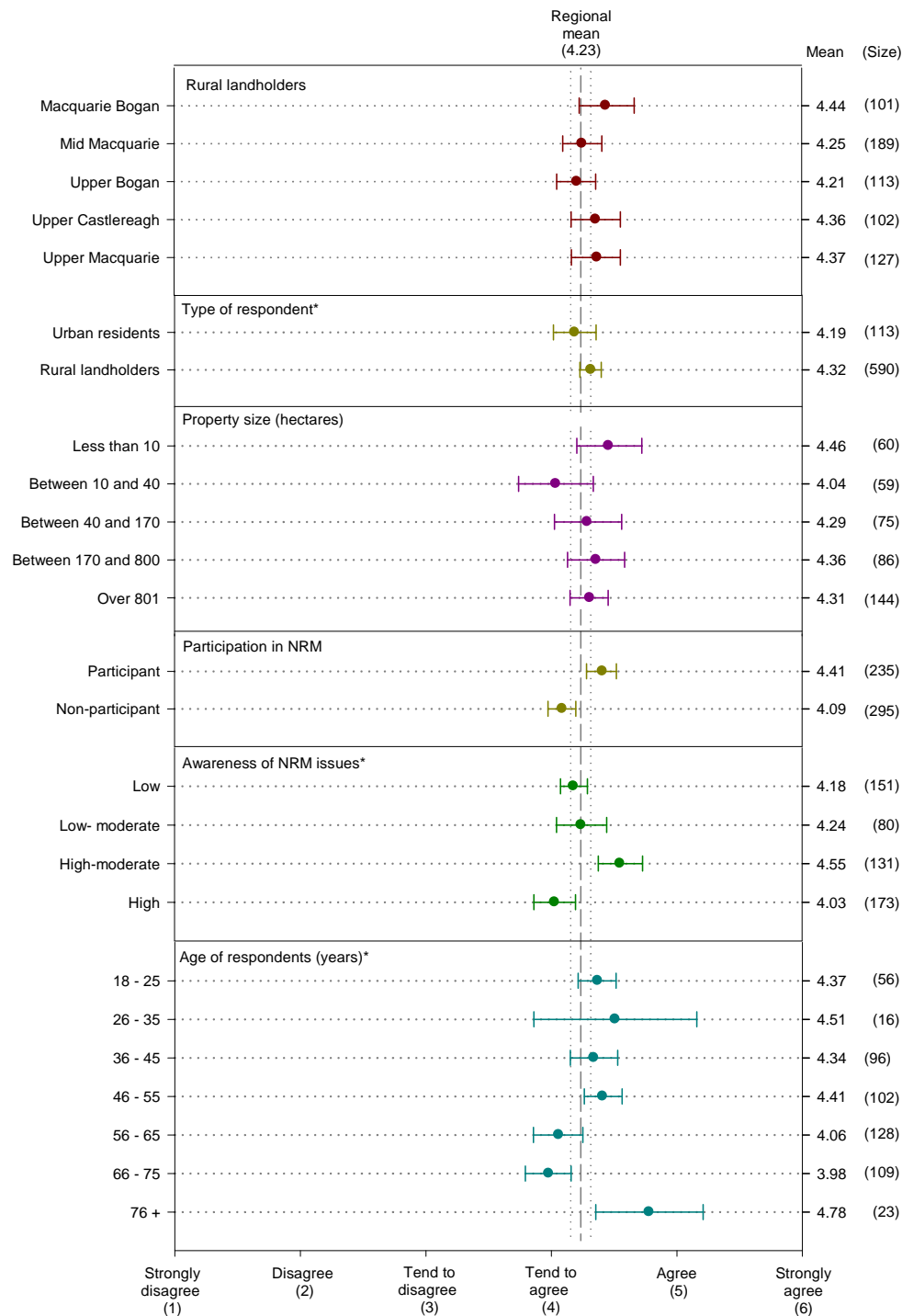
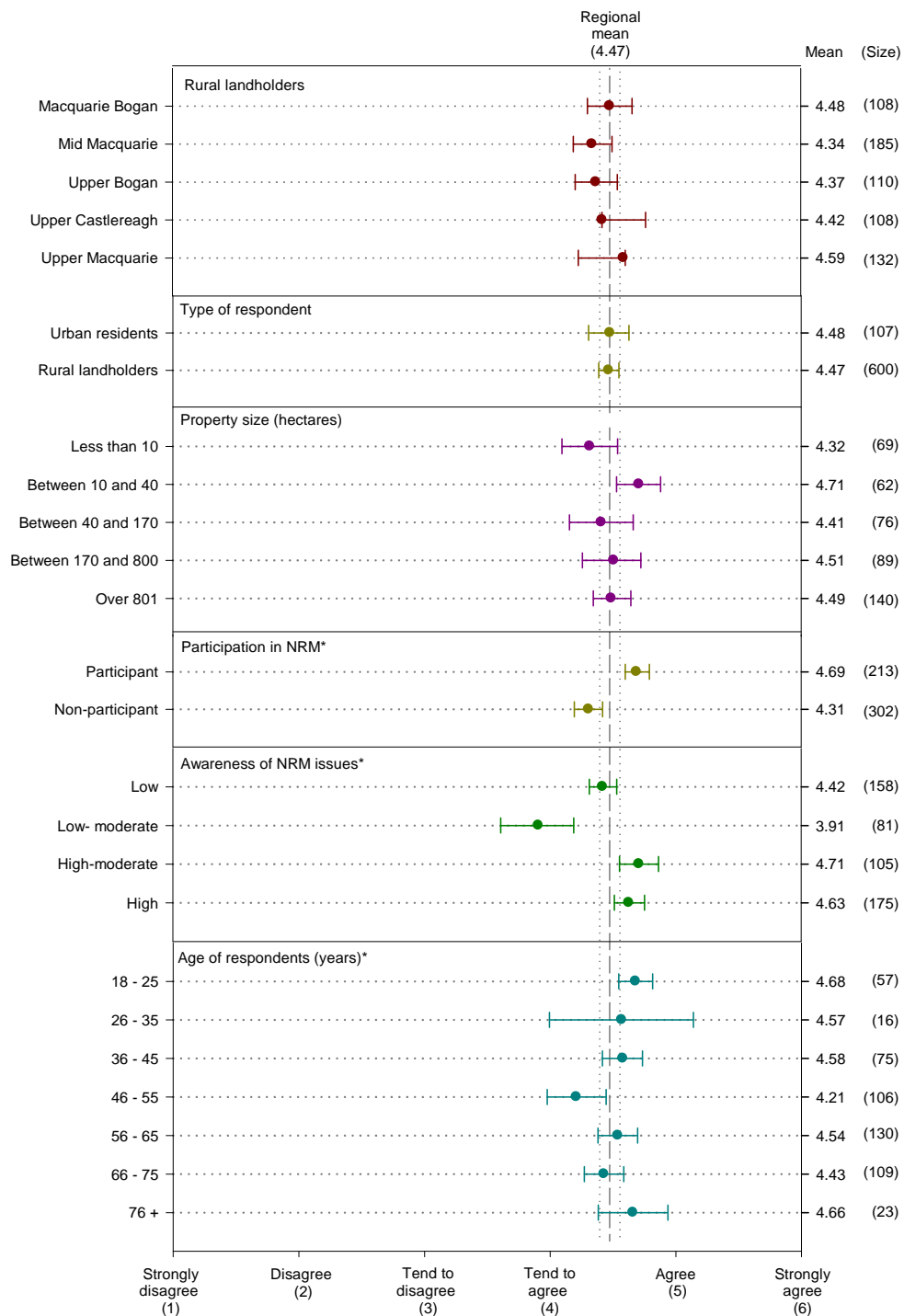


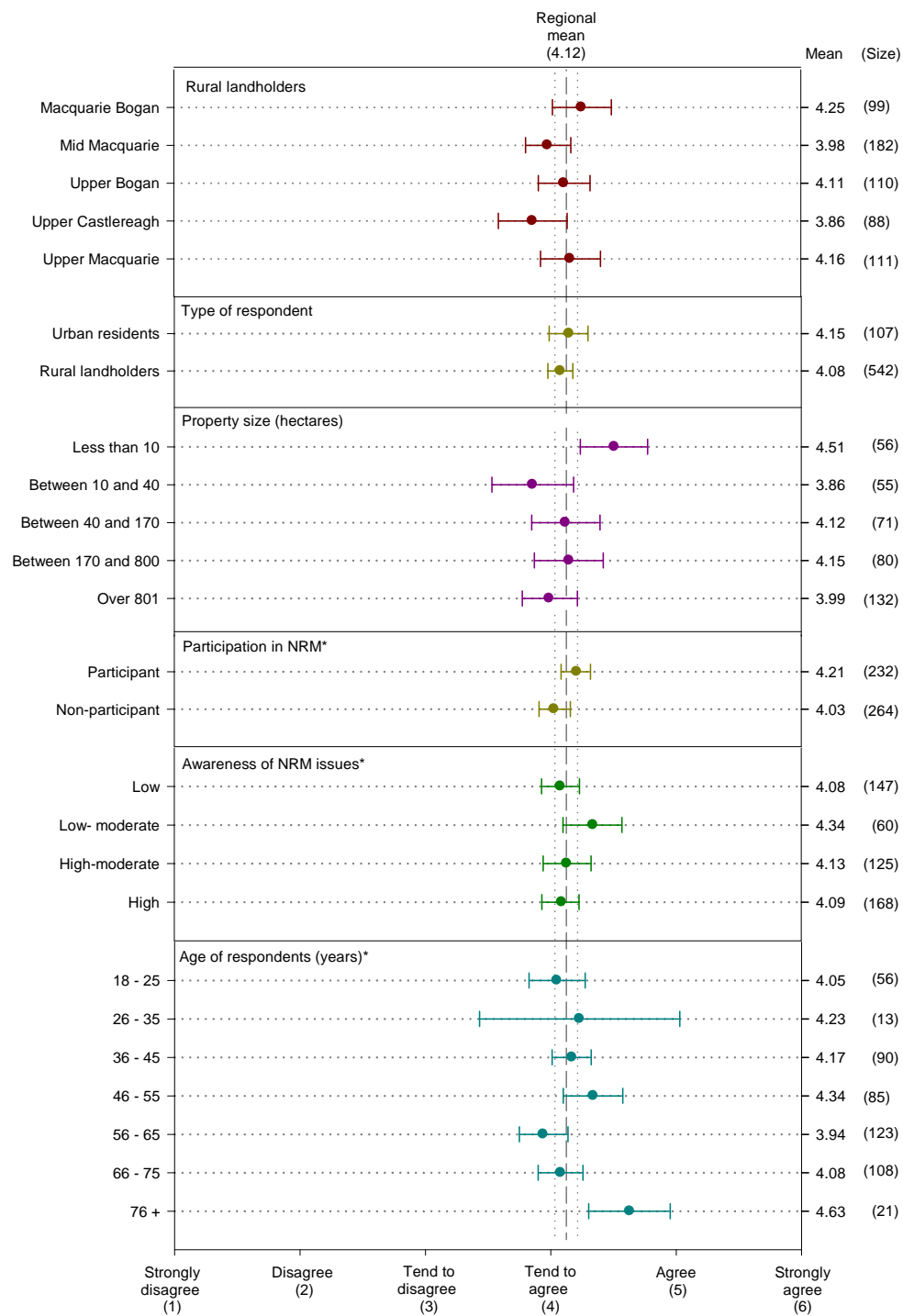
Figure 79 also shows that the majority of respondents in the region were supportive of the CMA and what it does. This was particularly the case amongst respondents who participated in NRM activities and who were also aware of NRM issues.

Figure 79 “I am generally supportive of the CMA and what it does”
(Excludes respondents who were not aware of the CMA. Due to low sample sizes it also excludes urban residents by subregion)



As shown in Figure 80, the majority of respondents within the region believed the CMA Board were implementing best management practices in the local area.

Figure 80 “I think the CMA Board are implementing the best management practices in my local area”



10. STAKEHOLDER ORGANISATIONS

A telephone survey was also undertaken of stakeholder organisations in the region, which assessed their knowledge and beliefs about the CMA and their attitudes towards community engagement in regional NRM. Table 1 indicates that 35 stakeholder organisations participated in the survey, with the majority represented by conservation groups and organisations. Although there were different types of stakeholder organisations included in the survey there were no statistical differences in the responses to questions across the different stakeholder groups.

Table 1 Type of stakeholder organisations

Type	Count	Percent
Conservation groups and organisations	12	34.3
State agencies	7	20.0
Agricultural industries and organisations	7	20.0
Local Government Authorities	4	11.4
Other groups and organisations	5	14.3
Total	35	100.0

Note: Conservation groups and organisations include Landcare groups (6)

10.1 Knowledge and Beliefs about the CMA

Figure 81 shows that across all stakeholder organisations there was low to moderate knowledge of the CMA.

Figure 81 “If you were to give yourself a score from one (1) to ten (10) in relation to your knowledge of the Central West Catchment Management Authority, with one (1) being no knowledge at all and ten (10) being all the knowledge anyone could have, what score would you give yourself?” (Stakeholder organisations)

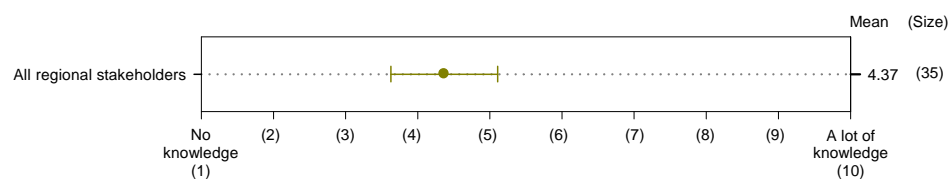
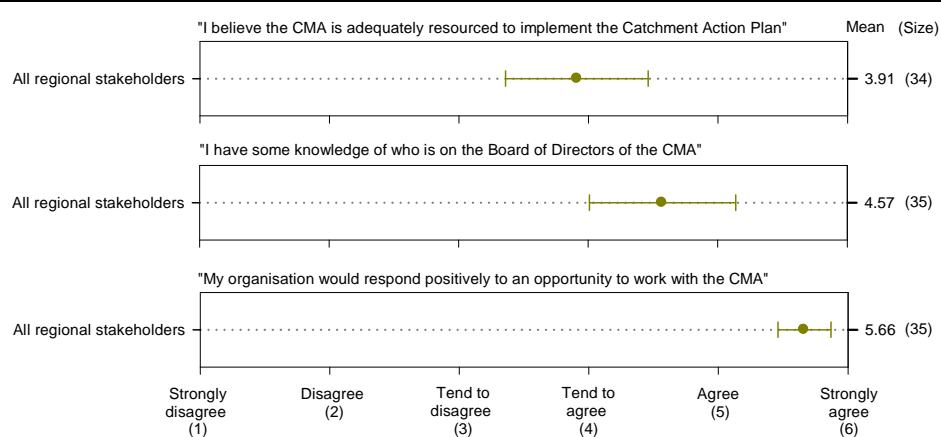


Figure 82 also shows that the majority of stakeholder organisations believed the CMA was adequately resourced to implement the Catchment Action Plan and they had some knowledge of who was on the Board of Directors of the CMA. Furthermore a clear majority of stakeholder organisations indicated they would respond positively to opportunities to work with the CMA.

Figure 82 Beliefs about the CMA amongst stakeholder organisations



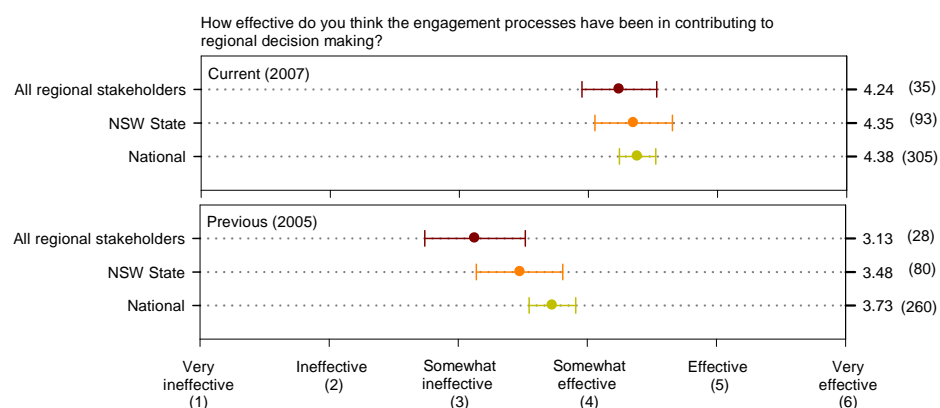
10.2 Engagement with the CMA

In relation to engagement with the CMA, all stakeholder organisations completed questions which were identical to questions recently included in a national survey of regional NRM bodies and stakeholder organisations⁵.

Figure 83 for instance asks stakeholder organisations how they would judge the current effectiveness of the engagement process used in the region and how they would have responded to the same question if asked two years ago. What is clear from this analysis is that in the Central West region the majority of stakeholder organisations believe the current engagement process to be effective and an improvement over two years ago where it was generally reported to be somewhat ineffective.

Figure 83 also shows comparisons with the State and National averages for this question, which includes 93 regional stakeholder organisations at a State level and 305 stakeholder organisations at a National level. The Central West CMA, from the perspective of regional stakeholder organisations, has a regional engagement process which is as effective as others within the State and Nationally. However, what is also evident from Figure 83 is that two years ago the CMA had an engagement process which was less effective than other regional NRM bodies in the State and Nationally. As such the CMA has progressed considerably in developing an effective community engagement process within the last two years.

Figure 83 Evaluation of Current and Past (2005) Stakeholder Engagement: “How effective do you think the engagement processes have been in contributing to regional decision making?” and “If you were asked this question two years ago how would you have answered it?” (Regional, State and National comparisons)



⁵ Fenton, D.M. and Rickert, A. (2007) *Monitoring and evaluating the social and institutional foundations of natural resource management: A national project (Draft)*. National Land and Water Resources Audit, Canberra.

Figure 84 shows the responses of regional stakeholder organisations to questions about the engagement process. The majority of regional stakeholder organisations believe the CMA to be providing leadership in relation to NRM; that the CMA has initiated sufficient activities for community engagement; that the diversity of stakeholder groups involved in CMA activities has been appropriate; and that the CMA is adequately informed by different stakeholders, sectors and interest groups.

The responses by regional stakeholder organisations are similar to the State and National averages. However, as shown in Figure 84 the CMA is slightly behind the State and National average in relation to it being adequately informed by different sectors, stakeholders and interest groups.

Figure 84 Beliefs about engagement (Regional, State and National comparisons)

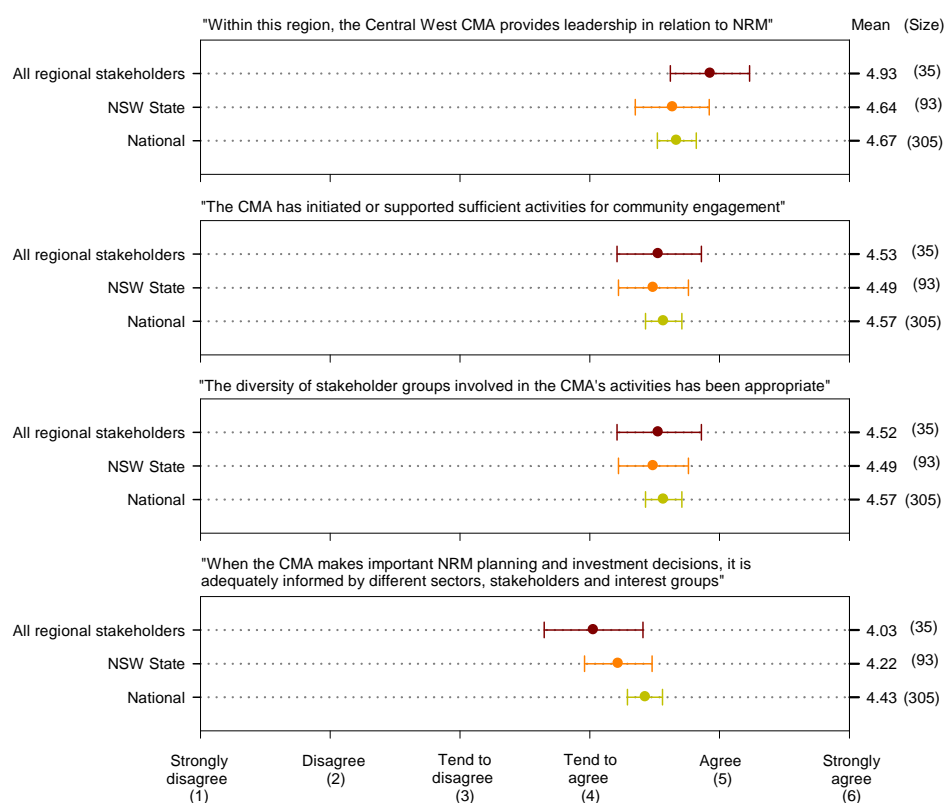
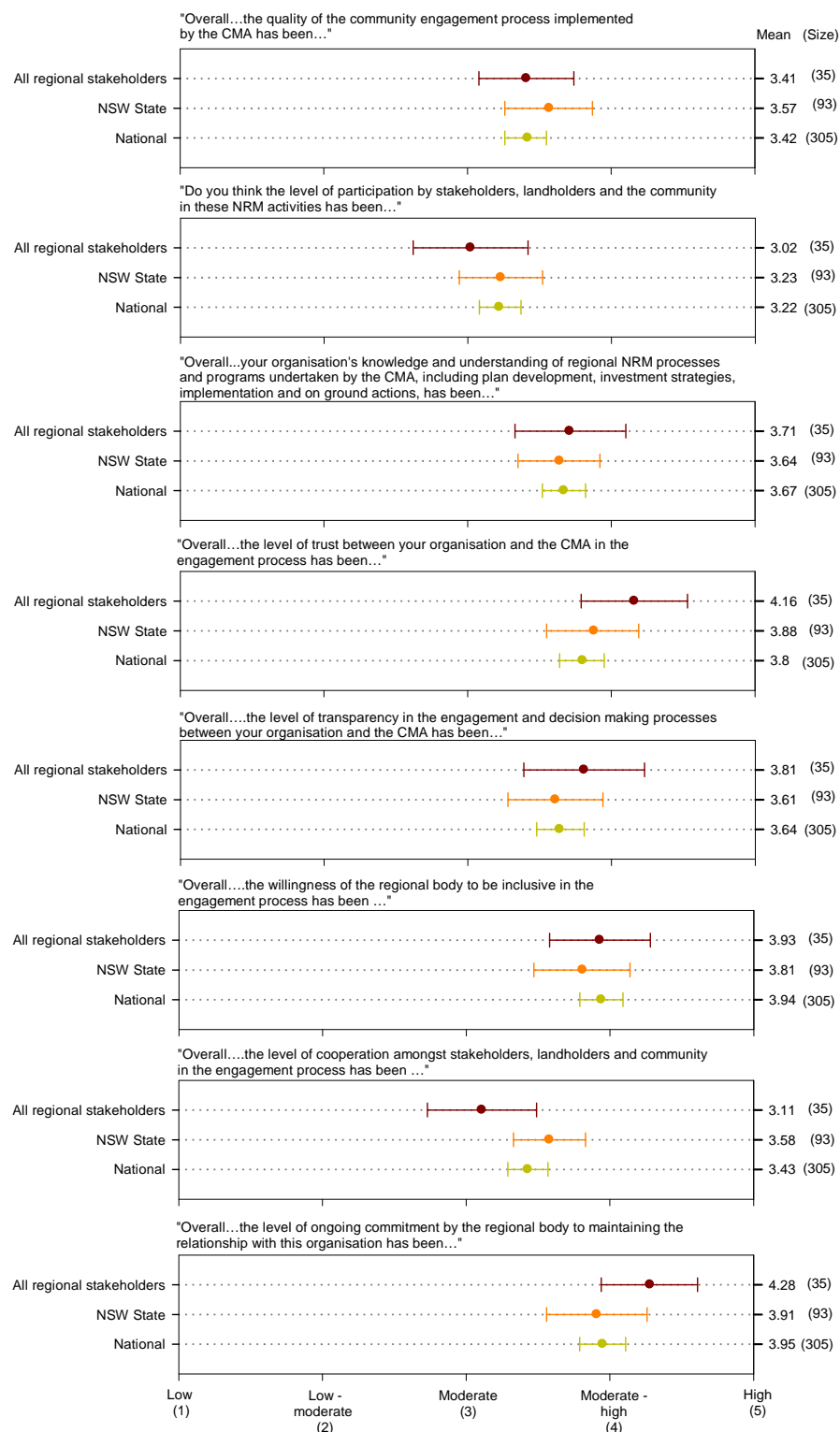


Figure 85 provides an assessment of the procedural issues associated with community engagement. In each graph the responses of regional stakeholder organisations in the CMA are shown, as are State and National averages for the same question. In many instances the CMA is showing responses higher than that found in State and National averages including for levels of trust, transparency and inclusiveness. It is only in relation to the level of participation and the level of cooperation amongst stakeholders, landholders and community that the CMA is somewhat lower than State and National averages.

Figure 85 Beliefs about the engagement process (Regional, State and National comparisons)



Appendix A
Regional Community Questionnaire

Interview Number: _____ Interviewer Name: _____ Date: _____

AWARENESS AND KNOWLEDGE OF NRM ISSUES

1. Do you own or look after a farm or rural property?

☐ Yes ☐ No (Go to Question 9)

2. **A.** I am going to read out a list of possible problems people have on their land. As I read out the list could you tell me if it occurs on your land? (*Interviewer: Read out: Allow multiple responses, if no issues leave blank*)

B. You have identified [read out] as issues. Which of these do you think is the most important issue that needs to be addressed? (*Interviewer: Place a 1 in second column of boxes*)

<input type="checkbox"/> <input type="checkbox"/> Salinity	<input type="checkbox"/> <input type="checkbox"/> Poor soil structure or acidity
<input type="checkbox"/> <input type="checkbox"/> Erosion from wind or water	<input type="checkbox"/> <input type="checkbox"/> Loss of native vegetation and habitat
<input type="checkbox"/> <input type="checkbox"/> Weeds	<input type="checkbox"/> <input type="checkbox"/> Poor soil condition
<input type="checkbox"/> <input type="checkbox"/> A decline in native animals	<input type="checkbox"/> <input type="checkbox"/> Lack of ground cover
<input type="checkbox"/> <input type="checkbox"/> Introduced pest animals	<input type="checkbox"/> <input type="checkbox"/> Water ways in poor condition, and
<input type="checkbox"/> <input type="checkbox"/> Poor quality ground water	<input type="checkbox"/> <input type="checkbox"/> An increase in invasive native scrub
<input type="checkbox"/> <input type="checkbox"/> Poor quality surface water	
<input type="checkbox"/> Are there any others (describe).....	

3. In identifying [2B] as an important issue on your property, what do you think has caused this to be an issue? (*Interviewer: Free recall: Allow multiple responses. If no issues identified in Q2 then skip this question*)

<input type="checkbox"/> Don't know	
<input type="checkbox"/> Overgrazing	<input type="checkbox"/> Vegetation clearing
<input type="checkbox"/> Poor or lack of fencing	<input type="checkbox"/> Poor soils structure or acidity
<input type="checkbox"/> Lack of weed control	<input type="checkbox"/> Poor cropping practices
<input type="checkbox"/> Native pests and animals (e.g. Kangaroos)	<input type="checkbox"/> Drought or lack of rain
<input type="checkbox"/> Feral animals and pests (e.g. pigs)	<input type="checkbox"/> Machinery, earthworks or other construction
<input type="checkbox"/> Invasive native scrub	<input type="checkbox"/> Government regulations
<input type="checkbox"/> Other (describe).....	

4. Imagine you had \$20,000 you could spend on improving the condition of land or water on your property. What would be the main thing you would do? (*Interviewer: Describe in detail*)

☐ Don't know ☐ Nothing to do

.....
.....

5. If you were to judge the health of the land and water on your property, on a scale from one (1) to ten (10) with one (1) being very unhealthy and ten (10) being very healthy, what score would you give it?

Score _____

☐ Don't know

6. Thinking back 10 years, and again on a scale from one (1) to ten (10) how would you have judged the health of your property then?

Score ____

☐ Don't know (inc. not on the property back then)

7. If you were given the opportunity to apply for funds to obtain a grant, which you didn't have to repay, to improve the condition of your property would you take up the grant?

☐ Yes

☐ Unsure

☐ No ... Why not? (*Interviewer: Free recall, allow multiple responses*)

☐ Too much paperwork

☐ Not interested in that kind of thing

☐ Too many 'strings attached'

☐ Don't trust the funding process

☐ Don't trust the organisation or personnel delivering the funding

☐ Probably wouldn't be eligible

☐ Don't see the need on my property

☐ Probably wouldn't get it anyway

Other reason

8. If you were offered funding or other assistance to protect cultural heritage on your property would you take it up?

☐ Yes

☐ Unsure

☐ No Why not? (*Interviewer: Free recall, allow multiple responses*)

☐ Too much paperwork

☐ Not interested in that kind of thing

☐ Too many 'strings attached'

☐ Don't trust the funding process

☐ Don't trust the organisation/personnel delivering the funding

☐ Probably wouldn't be eligible

☐ Don't have any cultural heritage on my property

☐ Don't want strangers coming onto my property

Other reason.....

9. If you were to give a score from one (1) to ten (10) in relation to your ability to identify environmental issues in your local area with one (1) being no ability to identify these issues and ten (10) being able to identify all the issues, what score would you give yourself? (*Interviewer: if queried, local area is defined as local town and surrounds for urban residents and local district for rural residents*)

Score ____

10. If you were to judge the health of the natural environment *in your local area* on a scale from one (1) to ten (10), with one (1) being very unhealthy and ten (10) being very healthy, what score would you give it?

Score ____

11. Thinking back 10 years, and again on a scale from one (1) to ten (10) how would you have judged the health of the natural environment *in your local area* then?

Score ____

☐ Don't know (inc. not here back then)

*****IF THE RESPONSE WAS 'YES' QUESTION 1 THEN SKIP QUESTION 12*****

- 12 A. I am going to read out a list of possible environmental issues. As I read out each issue, could you tell me if you think it occurs in *your local area*? (*Interviewer: read out, allow multiple responses*)

B. You have identified [read out] as important issues. Which of these do you think is the most important issue that needs to be addressed? (*Interviewer: Place a 1 in second column of boxes*)

- | | |
|---|---|
| <input type="checkbox"/> <input type="checkbox"/> Salinity | <input type="checkbox"/> <input type="checkbox"/> Poor quality surface water |
| <input type="checkbox"/> <input type="checkbox"/> Erosion (from wind or water) | <input type="checkbox"/> <input type="checkbox"/> Decline in soil health |
| <input type="checkbox"/> <input type="checkbox"/> Weeds | <input type="checkbox"/> <input type="checkbox"/> Loss of native vegetation and habitat |
| <input type="checkbox"/> <input type="checkbox"/> Decline of native animals | <input type="checkbox"/> <input type="checkbox"/> Loss of native animals and birds |
| <input type="checkbox"/> <input type="checkbox"/> Introduced pest animals | <input type="checkbox"/> <input type="checkbox"/> Lack of ground cover |
| <input type="checkbox"/> <input type="checkbox"/> Poor quality ground water | <input type="checkbox"/> <input type="checkbox"/> Poor health and condition of water ways |
| <input type="checkbox"/> <input type="checkbox"/> Over allocation or use of water | <input type="checkbox"/> <input type="checkbox"/> Invasive native scrub, and |
| <input type="checkbox"/> <input type="checkbox"/> The management of waste or effluent | <input type="checkbox"/> <input type="checkbox"/> Climate change impacts |
| <input type="checkbox"/> <input type="checkbox"/> Loss of grazing country | <input type="checkbox"/> Other (describe)..... |

13. These days when people talk about 'cultural heritage', what do you think they are most commonly referring to...

☐ Only Aboriginal heritage

☐ Only European heritage

☐ Both Aboriginal and European heritage

I am going to read out some statements people have made about the management of the environment in your local area. After I read out each statement, could you tell me whether you strongly agree, agree, tend to agree, tend to disagree, disagree, or strongly disagree with each statement? (*Interviewer: Identify score as 1-6*)

SA.....	A	TA	TD	D	SD
14. A lot more can be done to improve the efficiency of water use in urban areas.....	1	2	3	4	5 6
15. A lot more can be done to improve the efficiency of water use on most farms	1	2	3	4	5 6
16. More water should be allocated to the environment in this area	1	2	3	4	5 6
17. The amount of native vegetation put aside for nature conservation in this region is too low	1	2	3	4	5 6
18. I think the health and condition of native vegetation in the region is declining	1	2	3	4	5 6
19. I have a good understanding of what is meant by biodiversity	1	2	3	4	5 6

20. Over the past two years do you think community attitudes towards farming practices that minimise impacts on the environment have...?

- ☐ Become more positive ☐ Remained the same ☐ Become more negative ☐ Don't know

COMMUNITY INVOLVEMENT

21. In the last two years have you participated in any organised meetings or activities about environmental issues or the management of natural resources in your local area, such as Landcare?

☐ Yes

☐ No, why not...(*Interviewer: Free recall, allow multiple responses*)

☐ Not enough time or too busy

☐ Nothing ever happens

☐ Not interested

☐ Don't drive

☐ Don't like meetings

☐ Don't see the need

☐ Too old

☐ Haven't heard of any meetings

Other

22. If you wanted to know something about an environmental issue on your land or in your local area, where would you go to get this information? (*Interviewer: Free recall, allow multiple responses*)

☐ Central West CMA

☐ A Landcare group

☐ Ask other farmers

☐ State Government agencies (ie., DNR, DPI, Lands Dept)

☐ Ask friends or family

☐ Stock and station agent/rural merchandising

☐ Local Government, Council or Shire

☐ Other rural and agricultural organisations

☐ Internet /websites

Other

COMMUNITY PERCEPTIONS OF THE CMA

23. Have you heard of the Central West Catchment Management Authority or CMA?

☐ Yes

☐ Unsure (go to Question 34)

☐ No (go to Question 34)

24. Have you had any contact or communication with the CMA?

☐ No

☐ Yes...what was it?

☐ Attended a meeting organised by the CMA

☐ Tried to or did obtain funding or incentives through the CMA

Other

25. If you were to give yourself a score from one (1) to ten (10) in relation to your knowledge of the Central West Catchment Management Authority, with one (1) being no knowledge at all and ten (10) being all the knowledge anyone could have, what score would you give yourself?

Score ____

I am going to read out some statements people have made about the Central West Catchment Management Authority. After I read out each statement could you tell me whether you strongly agree, agree, tend to agree, tend to disagree, disagree, or strongly disagree with each statement? (*Interviewer: Identify score as 1-6*)

	SA	A	TA	TD	D	SD
26. The CMA is doing a good job in the management of natural resources in this region	1	2	3	4	5	6
27. The CMA is primarily responsible for controlling vegetation clearing.....	1	2	3	4	5	6
28. The CMA is a Government department	1	2	3	4	5	6
29. I would say I know about the CMA and what it does	1	2	3	4	5	6
30. The CMA only works with farmers	1	2	3	4	5	6
31. I am generally supportive of the CMA and what it does.....	1	2	3	4	5	6
32. The CMA is primarily responsible for water management	1	2	3	4	5	6
33. I think the CMA Board are implementing the best management practices in my local area.....	1	2	3	4	5	6
34. The CMA is responsible for the management of natural resource in the region. If the CMA wanted to communicate information to people in your local area, what do you think would be the best way for the CMA to do this? (<i>Interviewer: Free recall, allow multiple responses</i>)						
<input type="checkbox"/> Visit people at their homes or properties						
<input type="checkbox"/> Put information in the local newspaper						
<input type="checkbox"/> Put information on the radio						
<input type="checkbox"/> Place information on the CMA website						
<input type="checkbox"/> Place TV advertisements						
<input type="checkbox"/> Other						
<input type="checkbox"/> Have a field day						
<input type="checkbox"/> Hold community meetings						
<input type="checkbox"/> Post information through the mail						
<input type="checkbox"/> Email information						
<input type="checkbox"/> Letterbox drop						

RESPONDENT CHARACTERISTICS

35. What is the town or nearest town to where you live? _____
36. Do you live in town or on a rural property or farm outside of town?
- ☐ Live in town
- ☐ Live on a rural property or farm (go to Question 38)
37. Do you own or look after a rural property outside of town?
- ☐ Yes
- ☐ No (go to Question 41)
38. How large is the property?
- Acres or Hectares
39. If you were driving, how far away is the property from the nearest town?
- _____ Km or
- _____ Miles or
- _____ Minutes Drive
40. What is the nearest street/road intersection to the property? (*at minimum even one road will do*)
- _____ and _____
41. How many years have you lived in your local area _____ years
42. How many years have you lived on your current property _____ years
43. In what year were you born? 19_____
44. Interviewer: *Record Male or Female* ☐ Male ☐ Female

Appendix B
Stakeholder Questionnaire

Questionnaire Number: _____

KNOWLEDGE AND AWARENESS OF THE CMA

1. In your role with your organisation, have you had any contact or communication with the Central West Catchment Management Authority or CMA?

☐ No

☐ Yes...what was it?

☐ Attended a meeting or event organised by the CMA

☐ Tried to or did obtain funding or incentives through the CMA

☐ Received information from the CMA

Other _____

2. The Central West CMA recently completed a Catchment Action Plan to guide natural resource management activities in the region. If you were to give yourself a score from one (1) to ten (10) in relation to your knowledge of the Catchment Action Plan, with one (1) being no knowledge at all and ten (10) being all the knowledge anyone could have, what score would you give yourself?

☐ Score

COMMUNITY INVOLVEMENT

I am going to read out some statements about the Central West Catchment Management Authority. After I read out each statement could you tell me whether you strongly agree, agree, tend to agree, tend to disagree, disagree, or strongly disagree with each statement? (*Interviewer: Leave blank if really can't answer*)

	SA	A	TA	TD	D	SD
3. Within this region, the Central West CMA provides leadership in relation to NRM	1	2	3	4	5	6
4. I believe the CMA is adequately resourced to implement the Catchment Action Plan	1	2	3	4	5	6
5. The CMA has initiated or supported sufficient activities for community engagement.....	1	2	3	4	5	6
6. When the CMA makes important NRM planning and investment decisions, it is adequately informed by different sectors, stakeholders and interest groups.....	1	2	3	4	5	6
7. The diversity of stakeholder groups involved in the CMA's activities has been appropriate.....	1	2	3	4	5	6
8. I have some knowledge of who is on the Board of Directors of the CMA	1	2	3	4	5	6
9. My organisation would respond positively to an opportunity to work with the CMA on NRM activities in the region.....	1	2	3	4	5	6

In relation to the CMA's most recent NRM planning activities...

10. How effective do you think the engagement processes have been in contributing to regional decision making?

☐ Very effective

☐ Somewhat ineffective

☐ Effective

☐ Ineffective

☐ Somewhat effective

☐ Very ineffective

11. If you were asked this question two years ago how would you have answered it?

- | | |
|---|---|
| <input type="checkbox"/> Very effective | <input type="checkbox"/> Somewhat ineffective |
| <input type="checkbox"/> Effective | <input type="checkbox"/> Ineffective |
| <input type="checkbox"/> Somewhat effective | <input type="checkbox"/> Very ineffective |

12. Do you think participation by stakeholders, landholders and the community in these NRM activities has been...

- | | | | | |
|-------------------------------|---------------------------------------|--|------------------------------|-----------------------------------|
| <input type="checkbox"/> High | <input type="checkbox"/> Low-Moderate | <input type="checkbox"/> Moderate-High | <input type="checkbox"/> Low | <input type="checkbox"/> Moderate |
|-------------------------------|---------------------------------------|--|------------------------------|-----------------------------------|

Would you say that overall...

13. ...the quality of the community engagement process implemented by the CMA has been...

- | | | | | |
|-------------------------------|--|-----------------------------------|---------------------------------------|------------------------------|
| <input type="checkbox"/> High | <input type="checkbox"/> Moderate-High | <input type="checkbox"/> Moderate | <input type="checkbox"/> Low-Moderate | <input type="checkbox"/> Low |
|-------------------------------|--|-----------------------------------|---------------------------------------|------------------------------|

14. ...your organisation's knowledge and understanding of regional NRM processes and programs undertaken by the CMA, including plan development, investment strategies, implementation and on ground actions, has been...

- | | | | | |
|-------------------------------|--|-----------------------------------|---------------------------------------|------------------------------|
| <input type="checkbox"/> High | <input type="checkbox"/> Moderate-High | <input type="checkbox"/> Moderate | <input type="checkbox"/> Low-Moderate | <input type="checkbox"/> Low |
|-------------------------------|--|-----------------------------------|---------------------------------------|------------------------------|

15. ...the level of trust between your organisation and the CMA in the engagement process has been...

- | | | | | |
|-------------------------------|--|-----------------------------------|---------------------------------------|------------------------------|
| <input type="checkbox"/> High | <input type="checkbox"/> Moderate-High | <input type="checkbox"/> Moderate | <input type="checkbox"/> Low-Moderate | <input type="checkbox"/> Low |
|-------------------------------|--|-----------------------------------|---------------------------------------|------------------------------|

16.the level of transparency in the engagement and decision making processes between your organisation and the CMA has been...

- | | | | | |
|-------------------------------|--|-----------------------------------|---------------------------------------|------------------------------|
| <input type="checkbox"/> High | <input type="checkbox"/> Moderate-High | <input type="checkbox"/> Moderate | <input type="checkbox"/> Low-Moderate | <input type="checkbox"/> Low |
|-------------------------------|--|-----------------------------------|---------------------------------------|------------------------------|

17.the willingness of the regional body to be inclusive in the engagement process has been ...

- | | | | | |
|-------------------------------|--|-----------------------------------|---------------------------------------|------------------------------|
| <input type="checkbox"/> High | <input type="checkbox"/> Moderate-High | <input type="checkbox"/> Moderate | <input type="checkbox"/> Low-Moderate | <input type="checkbox"/> Low |
|-------------------------------|--|-----------------------------------|---------------------------------------|------------------------------|

18.the level of cooperation amongst stakeholders, landholders and community in the engagement process has been ...

- | | | | | |
|-------------------------------|--|-----------------------------------|---------------------------------------|------------------------------|
| <input type="checkbox"/> High | <input type="checkbox"/> Moderate-High | <input type="checkbox"/> Moderate | <input type="checkbox"/> Low-Moderate | <input type="checkbox"/> Low |
|-------------------------------|--|-----------------------------------|---------------------------------------|------------------------------|

19. ...the level of ongoing commitment by the regional body to maintaining the relationship with this organisation has been...

- | | | | | |
|-------------------------------|--|-----------------------------------|---------------------------------------|------------------------------|
| <input type="checkbox"/> High | <input type="checkbox"/> Moderate-High | <input type="checkbox"/> Moderate | <input type="checkbox"/> Low-Moderate | <input type="checkbox"/> Low |
|-------------------------------|--|-----------------------------------|---------------------------------------|------------------------------|

RESPONDENT CHARACTERISTICS

20. What is the name of the organisation you are with (or from)?

21. How long have you been involved with this organisation? _____ years

Appendix C
Advert included in Local Newspapers



2139139

Telephone Survey of Landholders and Residents

Central West Catchment Management Authority

The Central West Catchment Management Authority will shortly be commencing a telephone survey of 2,000 residents in the region. The aim of the survey is to identify issues and understand community attitudes towards land and water management in the region and your local area. In the next few months you may receive a telephone call from EBC, the research company undertaking the survey, asking you to participate in a 20 minute telephone interview.

*No information allowing individuals
to be identified is being collected.*

If you require further information about the survey, you can contact Ms Jen Shearing on (02) 6881 3400 or visit the website for further information.

www.ebc.net.au/cwcma

The Central West CMA, PO Box 227, Wellington, NSW 2820
Phone: 02 6840 7800

Appendix D
Content of Website

What are the objectives of the project?

The main objective of the project is to benchmark the existing level of community attitudes, awareness and involvement in natural resource management in the Central West. At a later date the project may be repeated and any changes in community attitudes, awareness and involvement will be assessed again. By monitoring these changes over time the CW CMA can better develop its programs and activities to improve the natural resource and environmental conditions in the region.

In addition to the primary objective, there are five additional objectives associated with the project which are:

- To provide a profile of the stakeholders in natural resource management in the Central West catchment;
- To benchmark the Central West community's level of awareness and attitudes to natural resource management issues;
- To establish the Central West community's current level of involvement in NRM activities;
- To benchmark the Central West community's level of awareness of CW CMA; and
- To establish the most appropriate methods to engage key stakeholders and the wider Central West community in natural resource management and market the CWCMA.

How is the project to be undertaken?

On the basis of interviews with CW CMA staff, stakeholders and members of the community, a questionnaire has been developed and pilot tested with a random sample of 40 households. The questionnaire will be used in telephone interviews with 2,000 households in the region. This will include people on rural properties and farms and those living in towns. The interview itself takes about 20 minutes to complete and names and addresses of those completing the interview are not required or collected.

Households that are selected for the survey will be contacted in the evenings and on weekends. The selection of households is completely random. For example, one random telephone number may be selected as the starting point (6888 7511) and another as the end point (6888 7555). Every second phone number between the starting and ending numbers would be contacted. In order to complete 2,000 interviews, there would of course be many start and end points used.

In addition to a telephone survey of the community, 50 stakeholder organisations from throughout the region will also be included in a separate telephone survey. The objective of the survey with stakeholder organisations is to better understand their knowledge and awareness of the CW CMA, their interaction with the CW CMA and their beliefs about how the community has been involved in natural resource management in the region.

How is the information to be presented?

Four reports will be developed for this project

1. Regional Community Survey Report

This report will describe the project objectives, methodology, analysis and findings. The report would include tables showing the analysis of data by sub region and where appropriate graphics would be used to describe and illustrate the data. Although comparisons across the five sub regions in the Central West would be undertaken, other analyses may also be appropriate depending on the data being analysed. For example, this may include comparisons between rural landholders and urban residents; comparisons between long and short term residents in of the region or comparisons amongst older and younger survey participants.

2. Regional Community Survey Atlas

The second report would consist of a regional atlas of the survey findings. Without identifying specific locations, the atlas would show the general distribution of survey results across the region. The atlas would be able to describe the distribution of natural resource management issues across the region. For example, are weeds more of an issue in the north or the south of the region? Are

there specific areas where landholders believe pest animals are of concern? Where do landholders believe poor soil condition is an issue?

3. Stakeholder Organisations Report

This report would focus specifically on the analysis of the 50 stakeholder organisations. The report would not identify stakeholder organisations, but would include tables showing the analysis of data at a regional level and where appropriate graphics would be used to describe and illustrate the findings.

4. Metadata Report

As this is a benchmarking study, it is important that the methodology for data collection and the description of the data is documented in sufficient detail so as to enable the project to be repeated at some time in the future. The data collected in the survey of the community and stakeholder organisations would be held by the CW CMA so that it can be compared with data collected at a time in the future. As indicated previously, no information will be stored which allows individuals or organisations to be identified.

What is the timeline for the project and when will it be completed?

The project commenced in early March. The telephone survey of the community and stakeholder organisations will be completed in June and July. Draft and final reports will be submitted to the CW CMA in October and November.

Appendix E
Letter to Stakeholder Organisations

Dubbo Office
Central West Catchment Management Authority
Level 1, 211 Macquarie St
PO Box 2105
Dubbo NSW 2830
Phone: 6881 3400 Fax: 6881 3401



XXX XXX
XXXX
XXXXXX
XXXXX NSW XXXX

6 July, 2007

Dear XXXX,

Re: Central West CMA Community Survey

As you are aware, the Central West Catchment Management Authority (CMA) has a responsibility to work with the wider community on matters relating to natural resource management in the central west catchments. The Central West CMA has a number of Catchment and Management Targets to achieve improvement in natural resource condition and capacity building over the next ten years.

In order to monitor progress towards the targets relating to community capacity building, the Central West CMA has contracted a consulting firm to undertake a survey of community attitudes and involvement in natural resource management.

The consulting firm undertaking this survey is Environment and Behaviour Consultants (EBC). The contract involves a phone survey of 2000 residents in the central west catchments, along with a similar survey of 50 representatives from key stakeholder groups in natural resource management.

Your organisation has been identified as a stakeholder group to be interviewed in the survey. If you choose to participate, the interview will be conducted by phone and will take approximately 20 minutes. The survey will ask questions on your organisation's knowledge and awareness of the CMA; level of community involvement by the CMA; and your organisation's networks for information exchange in the catchment.

I sincerely hope you are willing to participate in this component of the survey and assist the Central West CMA to monitor and evaluate its activities within the catchment.

Your sincerely,

Tim Ferraro
General Manager
Central West CMA