

LANDHOLDER SUMMARY

A SUMMARY EXTRACTED FROM:
'Social benchmarking for natural resource management:
2019 North Central Victoria' Final Report

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THE CONTEXT

This research employed a survey of rural property owners to inform the North Central CMA Board and staff as they develop, implement and evaluate the 2020-2026 North Central Regional Catchment Strategy (RCS). CMA typically have limited ability to accomplish their goals without the support of other stakeholders (e.g. Australian and state governments) and especially rural property owners who own most rural land in the North Central region and directly influence the condition of soil, waterways, wetlands and native vegetation. In turn, the condition of those environmental assets influences their livelihoods, well-being and wealth (including property values).

The 2019 North Central social benchmarking survey is part of a Southern Cross University (SCU) project led by Hanabeth Luke, jointly funded by the Soil CRC and the North Central CMA (a CRC partner). Data gathered will contribute to the wider Soil CRC research portfolio. More information on the Soil CRC can be found at www.soilcra.com.au

North Central CMA and Soil CRC staff worked together to review and revise the 2014 survey. A draft 2019 survey was subsequently pre-tested, including with a small group of rural owners. As in 2014, the 2019 survey was posted to a randomly selected sample of rural property owners (properties of 10 ha and above) identified using local government (i.e. Shire or City) ratepayer lists. The North Central CMA region includes a substantial part of 14 Shire or City local government areas (LGA). Surveys were posted to 2040 property owners and after removing those with an acceptable reason for a non-response, there were 1862 possible respondents. With 663 returned and completed surveys, the response rate for 2019 is 36%. For the North Central CMA, the survey process was expected to:

1. Describe the social/farming structure (property size, property subdivision/amalgamation, occupational identity of landholders and extent of absentee ownership) for the region.
2. Gather data to assess progress in the achievement of RCS and specific NRM program objectives (e.g. in the level of NRM knowledge).
3. Inform understanding of landholder adoption of best-practice NRM.
4. Inform Board and staff engagement with rural property owners (e.g. cohorts based on farmer occupational identity).

The survey gathered information about respondent's values; beliefs (e.g. in climate change, the primacy of private property rights); issues of concern (i.e. threats to those values); long-term plans; knowledge of NRM; confidence in best-practices NRM; engagement in NRM platforms and processes; sources of NRM information; land use/enterprises; background personal and property information (e.g. property size, absentee ownership); and implementation of best-practice NRM. With more than 120 survey items across these topics, the report summarises a large data set. The focus of this Landholder Summary is on directly responding to the four objectives listed above and identifying key lessons or conclusions.

The full report is available via the NC CMA website:

<http://www.nccma.vic.gov.au/resources/publications/social-drivers-natural-resource-management-2019-north-central-victoria>

A DESCRIPTION OF THE SOCIAL AND FARMING STRUCTURE

Information in Table A provides a partial picture of the social and farming structure of the North Central region.

Comparing data for 2014 and 2019 suggests that stability rather than change is the dominant theme. To the extent there are trends, in 2019 the median property size is smaller and more property owners are Part-time farmers, Hobby farmers and Non-farmers rather than Full-time farmers.

TABLE A: REGIONAL PROFILE: KEY PROPERTY AND PERSONAL ATTRIBUTES, 2019 (N=663)

Key attributes (medians unless indicated)	For all Respondents 2019	For all respondents 2014
Property size (area owned)	228 ha	253 ha
Bought additional land in region past 20 years	45%	47%
Subdivided or sold part of property past 20 years	15%	15%
Property leased, share farmed or agisted <u>by</u> others (mean)	45 ha	80 ha
Property leased, share farmed or agisted <u>from</u> others (mean)	225 ha	200 ha
Irrigated in 2018/19 season	26%	30%
Of those irrigated: surface water/ground water (n=214; n=170)	77%/24%	NA
Age of respondent	62 years	59 years
Farmer by occupation (i.e. Full-time farmer)	49%	52%
Gender of respondent (n=608)	22% female	17%
Resident on property	73%	72%
Length of family ownership	46 years	NA
Other family members working full-time on property	30%	30%
Paid off-property work last 12 months (n=472) mean score	65 days	150 days
Hours work on-property per week (n=572)	32 hours	40 hours
Income from agriculture in North Central region 2018/19	69%	NA
% all survey respondents net profit from agriculture >\$50K	24%	NA
Received net off-property income 2018/19	70% me 30% spouse	NA
% all survey respondents net income from off-property >50K	31%	NA
Landcare member/participant	30%	36%
Local commodity group participant	17%	15%
Soil health group participant	5.5%	8%
Completed short course related to property management past 5 years	19%	23%
Property management or whole-farm plan	28%	36%
Attended a field day/farm walk/demonstration on native plants & animals last 12 months	19%	19%
Attended a field day/farm walk on soil health last 12 months	32%	40%

Agriculture remains the dominant land use across all areas and Full-time farmers manage about 80% of the land owned by survey respondents. Irrigated agriculture is also important. However, the values being expressed by property owners and the underlying economy (i.e. sources of income) vary significantly with distance from metropolitan areas of Melbourne, Bendigo and Ballarat. There are landscapes that retain a focus on the business of agriculture yet there are other landscapes more appropriately described as multi-functional in that there is a mix of production, environmental and amenity values attached to the landholder's property.

VALUES ATTACHED TO PROPERTY

The summary for the 16 items exploring values attached to the property illustrates the extent a mix of values is important for most respondents across most of the North Central region [Table B]. For example, the three items most frequently given an Important/Very important rating focus on future environmental health/condition, producing food and fibre for others and the amenity value of their property.

TABLE B: VALUES ATTACHED TO PROPERTY, 2019 (N=663)

Attached values	Important/Very important
Ability to pass on a healthier environment for future generations	85%
Sense of accomplishment from producing food and fibre for others ###	69%
An attractive place/area to live ###	83%
A great place to raise a family ###	71%
Sense of accomplishment from building/maintaining a viable business ###	69%
The productive value of the soil on my property *** ###	75%
An asset that is an important part of family wealth ###	74%
Native vegetation provides habitat for birds and animals ###	70%
Native vegetation makes the property an attractive place to live ###	69%
An important source of household income ###	62%
Opportunity to learn new things	67%
A place where I can escape the pressures of life ###	55%
Provides a sense of belonging to a community	61%
A place or base for recreation *** ###	51%
An asset that will fund my retirement	55%
Working on the property is a welcome break from my normal occupation *** ###	35%

*** Significant difference across LGA ### Significant difference across the four farmer identity cohorts
 Green shading: environmental. Grey shading: economic. Brown: social. Blue: Amenity/recreation.

Survey data provide considerable evidence that agriculture does not underpin the economy across much of the North Central region or engagement in NRM best-practice. As identified in Table A, only two-in-three reported any income from agriculture; and only about a quarter of all respondents (24% of 663) said they had a net profit above \$50,000 from agriculture. At the same time, about a third of all respondents (31% of 663) said they achieved a net off-property income above \$50,000.

A USEFUL TYPOLOGY OF PROPERTY OWNERS BASED ON FARMER IDENTITY

When asked to select from one of four farmer identity cohorts, 49% of all respondents identified as Full-time farmers, 19% as Part-time farmers, 13% as Hobby farmers and 19% as Non-farmers. These data suggest that Full-time farmers are now a minority cohort (down from 52% in 2014). Compared to 2014, a larger proportion of respondents identify as Non-farmers and a smaller proportion as Part-time farmers.

As might be expected, Full-time and Part-time farmers are more likely to give a higher rating to items focussed on farming as a business and Hobby farmers and Non-farmers to give a higher rating to items focused on environmental condition and amenity. At the same time, there are shared values or common ground. This information, along with other data about issues of concern and beliefs, provide a sound foundation for effectively engaging the different cohorts and making more general appeals to property owners. A summary of differences across key personal and property attributes is provided in Table C.

TABLE C: SIGNIFICANT DIFFERENCES ACROSS FOUR FARMER IDENTITY COHORTS BY KEY PROPERTY AND PERSONAL ATTRIBUTES, 2019 (N=663)

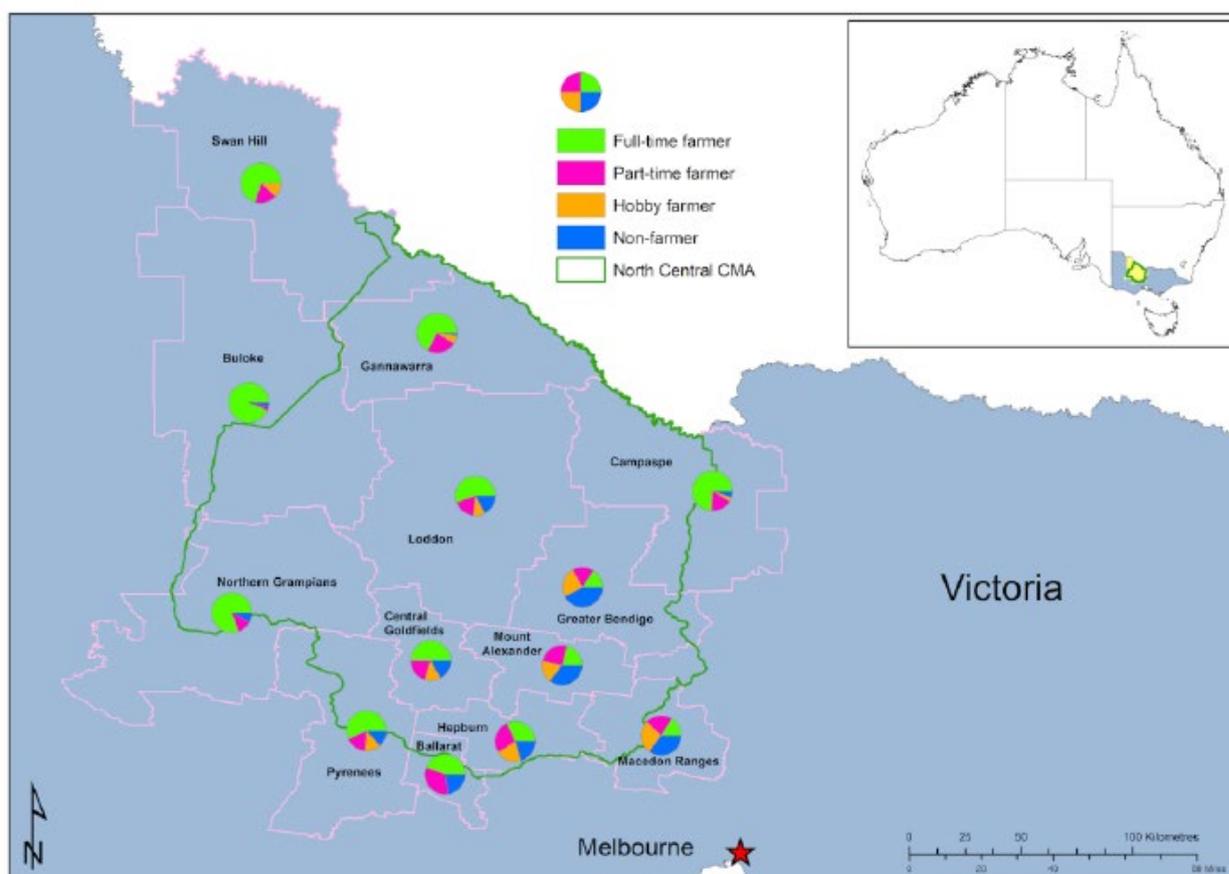
Key attributes	Full-time (49%)	Part-time (19%)	Hobby (13%)	Non-farmer (19%)
Property size	800 ha	142 ha	30 ha	30 ha
Bought additional land in region past 20 years	71%	35%	10%	12%
Irrigated in 2018/19 season	36%	26%	19%	6%
Irrigated surface/ground water (n=170)	84%/26%	72%/24%	71%/13%	53%/25%
Gender of respondent	12% female	25%	30%	42%
Resident on property	87%	60%	76%	49%
Length of family ownership	74 years	40 years	25 years	21 years
Other family members working full-time on property	52%	14%	5%	2%
Paid off property work last 12 months	12 days	133 days	102 days	114 days
Hours work on-property per week	50 hours	20 hours	10 hours	4 hours
Income from agriculture in North Central region 2018/19	96%	81%	28%	13%
% all survey respondents net profit agriculture >\$50K	45%	13%	Nil	Nil
Received net off-property income 2018/19	42% me	88% me	87% me	89% me
% all survey respondents net off-property income >\$50K	18%	55%	41%	38%
Landcare member/participant	34%	32%	25%	18%
Local commodity group participant	28%	10%	6%	3%
Soil health group participant	9%	4%	2.5%	Nil
Completed short course related to property management past 5 years	29%	13%	11%	6%
Property management or whole-farm plan	34%	30%	22%	14%
Attended a field day/farm walk on soil health last 12 months	45%	28%	18%	7%

There are significant differences in the implementation of best-practice across the four farmer identity cohorts. Full-time and Part-time farmers are more likely to be implementing almost all practices than are respondents in the other two cohorts (so for 16 of 19 practices).

Those self-identifying as Full-time farmers are a minority (slight) of all respondents. Nevertheless, this cohort manages 80% of the land area owned by respondents within the region. Given that <50% of this cohort has implemented 10 of 19 best-practices over their full-period of management, it may seem logical for NRM practitioners to focus engagement on this cohort. Indeed, survey data suggests this is occurring and this may be a sensible approach where Full-time farmers are managing critical parts of a landscape (i.e. high value assets under threat). A nuanced approach should also consider the extent that other engagement objectives are relevant. For example, does the North Central CMA want to engage a cross section of property owners to improve NRM literacy, enhance voter commitment to NRM, and motivate people to volunteer to work with local and non-government organisations?

As indicated in Map A there are significant variations across the LGA in the proportion of respondents selecting each of the four farmer identity cohorts.

MAP A: FARMER IDENTITY COHORTS BY LGA, 2019 (N=663)



Farmer identity encapsulates and shapes important differences in values and beliefs, personal norms, knowledge of NRM and engagement in NRM platforms and processes and in turn, implementation of best practices.

LONG-TERM PLANS

As in 2014, two-in-three respondents said their long-term plan was for *Ownership of the property to stay within the family*. Only 18% said *The property will be sold* and fewer respondents (7%) said it was likely *The property will be subdivided and a large part of the property sold*. At the same time, it seems that for about one-in-three of those intending to pass their property to family members there is a gap between intentions and taking steps to engage family members in succession planning.

There is also evidence of many respondents wanting to continue living on their property as long as possible. For example, about half said it is unlikely *I will move off the property around/soon after reaching 65 years*.

It seems that across the respondents there is a diversity of likely futures and so it is useful to look at the responses by Farmer Identity:

TABLE D: SIGNIFICANT DIFFERENCES IN LIKELIHOOD OF LONG-TERM PLANS BY FARMER IDENTITY, 2019 (N=663, N=649 TO 640)

Long term plans	Full-time farmer	Part-time farmer	Hobby farmer	Non-farmer
Ownership of the property will stay within the family	4.1 72%	3.9 64%	3.8 65%	3.7 53%
The enterprise mix will be changed to diversify income sources	2.8 31%	2.7 26%	2.2 17%	2.0 7%
Additional land will be purchased	2.9 40%	2.3 16%	1.9 15%	1.7 5%
Additional land will be leased or share farmed	2.5 27%	2.1 10%	1.6 9%	1.5 3%
The enterprise mix will be changed to more intensive enterprises	2.6 19%	2.4 18%	2.0 9%	1.7 3%
The enterprise mix will be changed to less intensive enterprises	2.5 14%	2.3 12%	2.2 9%	2.0 6%
Me or my spouse will seek additional off-property work	2.1 17%	2.8 35%	2.6 32%	2.6 17%
The property will be sold	2.0 13%	2.3 17%	2.6 24%	2.7 31%
I will move off property around/soon after reaching age 65 years	2.3 17%	2.3 14%	2.3 18%	2.1 9%
All or most of the property will be leased or share farmed	2.2 17%	2.4 24%	2.0 11%	2.4 18%
Some part of the property will be placed under a conservation covenant	1.9 9%	2.0 12%	1.8 8%	2.3 16%

Note: Mean scores calculated after removing N/A responses. So mean out of 5

Blue shading: positive linear relationship with farmer identity. Orange shading: negative linear relationship

TRUST AND TRUSTWORTHINESS

Respondents were more likely to agree than disagree that they could trust the North Central CMA. The level of trust was higher for the item focussed on providing useful advice than for the item referring to providing appropriate financial assistance. About a third of all respondents indicated they held a neutral view about whether they could trust the North Central CMA, suggesting there is potential to lift the trust rating.

There are significant differences across the four farmer identity cohorts for trust items and the trustworthiness item exploring benevolence.

- Non-farmers and Hobby farmers are more likely to agree that *I can rely on the North Central CMA to provide useful advice about waterways & wetlands management.*
- Full-time farmers are more likely to agree that *I can rely on the North Central CMA to provide appropriate financial assistance for waterways & wetlands management.*
- Non-farmers are more likely to agree that *The North Central CMA keeps landholders' interests in mind when making decisions about waterways & wetlands management.*

BELIEF IN CLIMATE CHANGE

A small majority (60%) believe humans are changing the climate. It seems these respondents also believe there will be dire consequences if no action is taken but are optimistic that it is not too late to take action. At the same time, about 40% of respondents indicate they do not believe or are uncertain about whether humans are changing the climate.

Those with a stronger farmer identity are less likely to believe in climate change but are more optimistic about the capacity of landholders in their region to adapt to expected changes in rainfall patterns. It seems that Full-time and Part-time farmers have distinguished between the extensive list of global impacts of climate change and changes in rainfall patterns that are expected to affect their region and to which they may already be responding.

NRM practitioner engagement with property owners is increasingly focussed on the adaptations that property owners can and are making in response to changing weather patterns. Evidence from across the survey topics supports this approach, including that:

1. *Changes in weather patterns* was the district scale issue listed as important by the most respondents (i.e. 71%).
2. Over 60% of Full-time farmers and over 70% of Part-time farmers agreed that *Primary producers should do all they can to reduce carbon emissions from their activities.*
3. Over half of the Full-time farmers and Part-time farmers in this survey are *Confident landholders in this region can adapt to expected changes in rainfall patterns.*

TOP ISSUES AT DISTRICT AND PROPERTY SCALE

FIGURE A: TOP 10 ISSUES AT DISTRICT SCALE (N=663, N=640 TO 593)

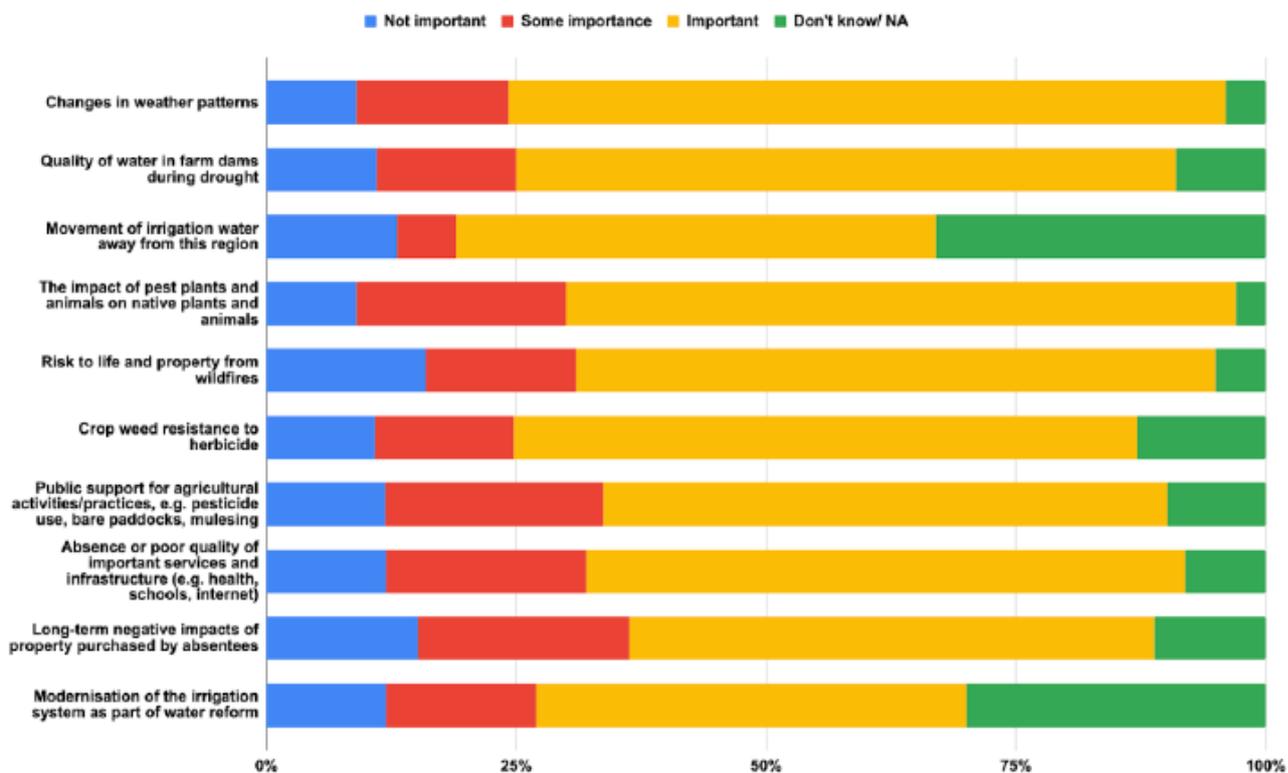
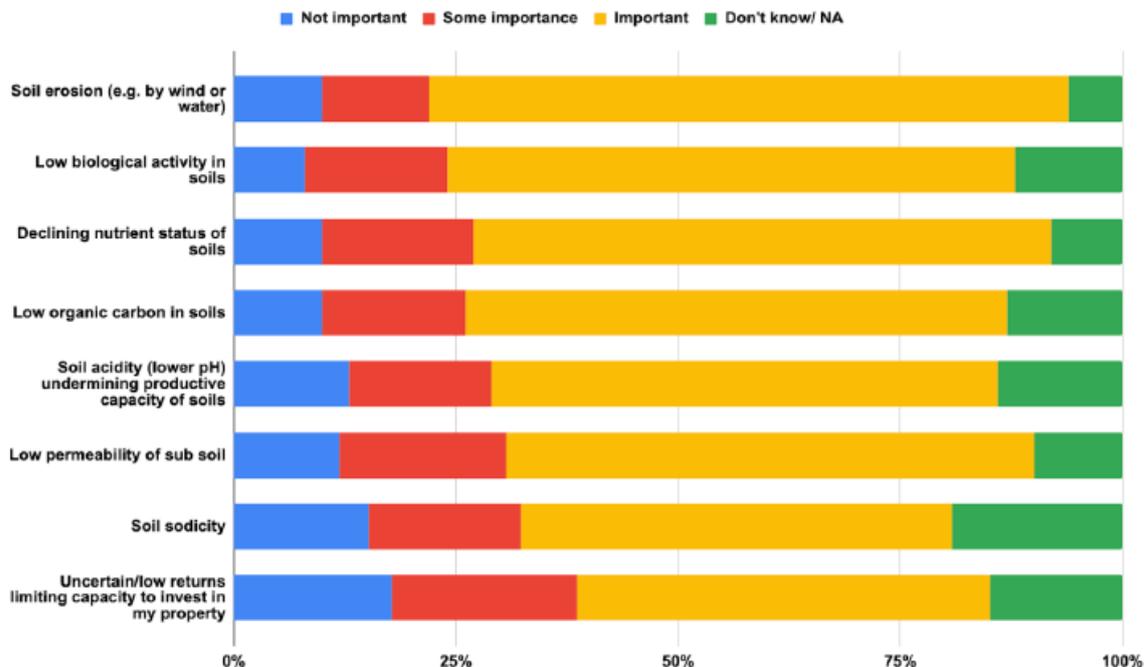
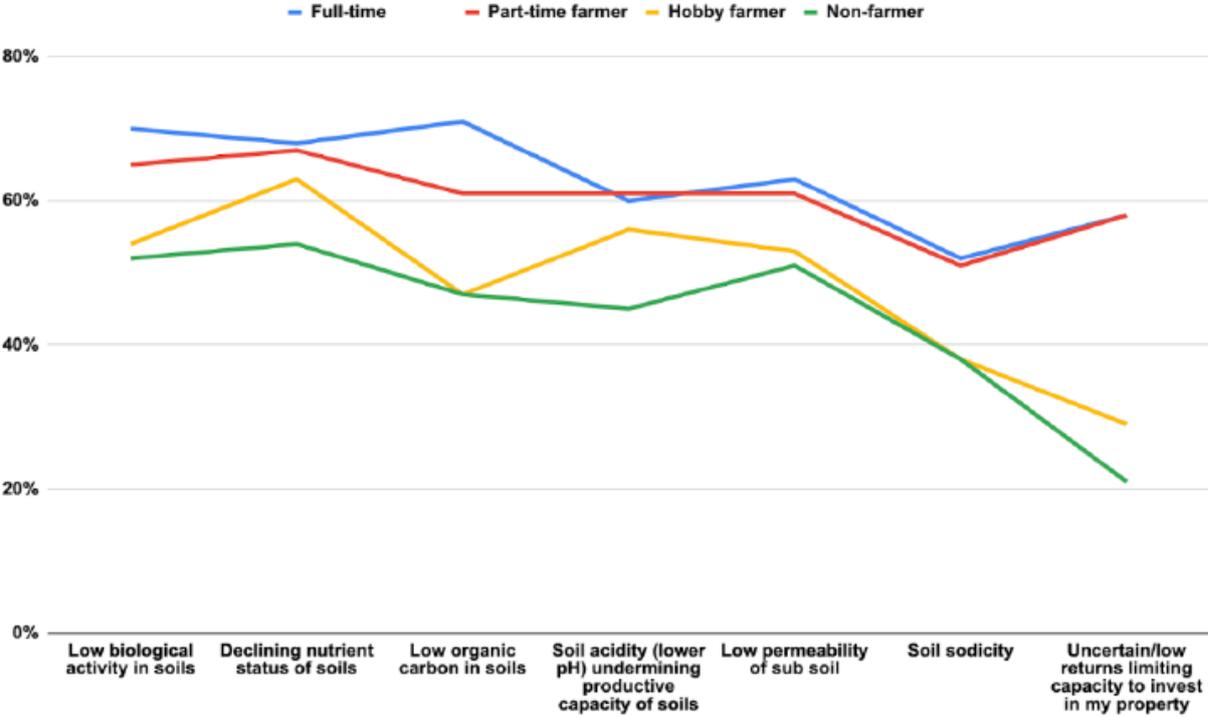


FIGURE B: ASSESSMENT OF ISSUES AT THE PROPERTY SCALE, 2019 (N=663, n=640 TO 593)



There are important and significant differences in the importance of property scale issues by farmer identity:

FIGURE C: SIGNIFICANT DIFFERENCES IN IMPORTANCE OF PROPERTY SCALE ISSUES BY FARMER IDENTITY, BY % SELECTED IMPORTANT/ VERY IMPORTANT RATINGS 2019 (N=663, n=640 TO 593)



LOCAL GOVERNMENT PROFILES

This section provides profiles for 12 of the 14 LGA that are within the North Central CMA region. Profiles are not provided for Mitchell or Ballarat. Only a small part of the Mitchell and Ballarat LGA are within the North Central CMA region. In both cases, the small number of respondents from these LGA means any summaries would be unreliable.

The profiles provide some of the regional variation masked by the regional summaries. For some items included in the profiles there is a statistically significant difference across the LGA. Other topics/items have been included to provide regional NRM practitioners, especially those new to the region, with accessible summaries illustrating important sub-regional contexts. For example, in key values and issues.

LGA PROFILES

		Loddon	Macedon Ranges	Gannawarra	Greater Bendigo	Hepburn	Mount Alexander	Northern Grampians	Buloke	Campaspe	Central Goldfields	Pyrenees	Swan Hill
Number of respondents		111	38	56	91	54	64	52	32	60	33	33	18
Family members interested in taking on property		42%	37%	46%	31%	43%	31%	56%	37%	52%	23%	35%	28%
Level of knowledge of NRM	How to identify main constraints to soil productivity on property	50%	27%	68%	34%	24%	36%	70%	73%	63%	52%	48%	56%
	Role of understorey plants for birds	28%	38%	36%	36%	39%	52%	32%	20%	34%	34%	28%	33%
Prioritise private property rights (harvesting rainfall)		32%	51%	34%	47%	49%	50%	34%	29%	32%	45%	44%	39%
Confidence that best-practices are effective	Fencing to manage stock access to waterways & wetlands	70%	81%	66%	78%	64%	80%	62%	72%	78%	60%	69%	50%
	Benefits of stubble retention	65%	35%	71%	43%	36%	40%	74%	87%	71%	58%	52%	72%
	Watering stock off-stream improves bank stability & plants	57%	68%	61%	63%	55%	69%	44%	66%	66%	57%	63%	44%
Belief in climate change		53%	79%	46%	72%	75%	86%	51%	35%	42%	59%	67%	39%
Predisposition to trust		50%	37%	52%	45%	42%	40%	45%	42%	40%	66%	30%	28%
Predisposition to accept risk		45%	58%	63%	51%	48%	51%	43%	42%	45%	43%	38%	44%
Enterprise mix	Crop	74%	5%	57%	26%	28%	19%	87%	94%	73%	47%	58%	28%
	Dairy	4%	nil	14%	nil	2%	nil	nil	nil	23%	3%	nil	6%
	Beef	19%	37%	39%	19%	37%	27%	14%	16%	28%	18%	24%	22%
	Sheep	64%	37%	41%	53%	37%	39%	83%	72%	48%	67%	85%	39%
	Living/recreation space	29%	53%	41%	37%	46%	41%	25%	38%	18%	27%	39%	56%
Farmer identity	Full-time farmer	55%	16%	67%	16%	32%	21%	80%	94%	74%	50%	57%	71%
	Part-time farmer	18%	22%	24%	17%	28%	26%	12%	3%	17%	20%	17%	18%
	Hobby farmer	10%	27%	7%	25%	20%	18%	nil	nil	3%	13%	13%	12%
	Non-farmer	17%	35%	2%	42%	20%	36%	8%	3%	5%	17%	13%	nil

		Loddon	Macedon Ranges	Gannawarra	Greater Bendigo	Hepburn	Mount Alexander	Northern Grampians	Buloke	Campaspe	Central Goldfields	Pyrenees	Swan Hill
Have implemented best-practice over the full-period of management	Fenced waterways & wetlands	29%	53%	38%	25%	37%	31%	52%	34%	32%	30%	42%	22%
	Tested soils for nutrient status	47%	34%	63%	26%	43%	39%	75%	75%	72%	39%	64%	56%
	Used minimum or no tillage	60%	29%	55%	32%	33%	38%	73%	88%	75%	49%	64%	44%
	Fenced native bush/grasslands	49%	55%	38%	31%	44%	45%	52%	63%	45%	36%	52%	39%
Median property size	460 ha	26 ha	290 ha	40 ha	50 ha	51 ha	1000 ha	1525 ha	400 ha	400 ha	403 ha	50 ha	
Median time property in family	50 years	20 years	60 years	26 years	30 years	35 years	100 years	100 years	60 years	70 years	63 years	40 years	
Property principal place of residence	76%	67%	83%	61%	71%	71%	73%	67%	86%	58%	70%	94%	
Landcare participant	29%	32%	31%	14%	28%	44%	48%	40%	18%	21%	44%	11%	
Have property management plan	25%	30%	32%	16%	30%	28%	31%	28%	18%	32%	26%	50%	
Male respondent	80%	71%	83%	73%	59%	57%	90%	94%	93%	79%	87%	83%	
Any income from agriculture	76%	31%	84%	39%	65%	48%	92%	93%	92%	74%	77%	83%	
% all respondents with net profit from agriculture >\$50k	40%	12%	44%	14%	25%	11%	64%	70%	21%	21%	55%	47%	
% all respondents with net off-property income > \$50k	25%	45%	27%	38%	35%	41%	23%	16%	22%	30%	27%	39%	
Days paid off-property work	51 days	116 days	44 days	106 days	96 days	86 days	51 days	1 day	45 days	30 days	42 days	76 days	

		Loddon	Macedon Ranges	Gannawarra	Greater Bendigo	Hepburn	Mount Alexander	Northern Grampians	Buloke	Campaspe	Central Goldfields	Pyrenees	Swan Hill
Top 4 attached values	1	Pass on healthier environment 88%	Attractive place to live 92%	Pass on healthier environment 96%	Attractive place to live 92%	Attractive place to live 85%	Attractive place to live 90%	Sense of accomplishment building business 96%	Sense of accomplishment building business 97%	Sense of accomplishment building business 95%	Opportunity to learn new things 86%	An important source of household income 85%	Sense of accomplishment building business 100%
	2	Productive soil 87%	Ability to pass on 86%	Sense of accomplishment building business 93%	Pass on healthier environment 88%	Pass on healthier environment 83%	A great place to raise a family 90%	An important source of household income 92%	An important source of household income 97%	Productive soil 93%	Productive soil 86%	Productive soil 84%	Attractive place to live 94%
	3	Sense of accomplishment building business 87%	Place to raise family 81%	Sense of accomplishment producing food 91%	Native vegetation for an attractive place to live 77%	Opportunity to learn new things 80%	Pass on healthier environment 85%	Pass on healthier environment 90%	Productive soil 97%	Pass on healthier environment 90%	Sense of accomplishment building business 85%	Sense of accomplishment building business 82%	A great place to raise a family 88%
	4	Sense of accomplishment producing food 85%	Escape pressures of life 79%	Productive soil 91%	A great place to raise a family 75%	A great place to raise a family 77%	Sense of accomplishment building business 81%	Sense of accomplishment producing food 89%	Attractive place to live 94%	Sense of accomplishment producing food 88%	Attractive place to live 84%	Pass on healthier environment 81%	An asset that is an important part of family wealth 88%
Top 4 issues	1	Soil erosion 83%	Risk to life and property from wildfires 76%	Movement of irrigation water away from this region 94%	Changes in seasonal weather patterns 83%	Risk to life and property from wildfires 83%	Soil erosion 84%	Crop weed resistance to herbicide 90%	Crop weed resistance to herbicide 97%	Movement of irrigation water away from this region 91%	Soil erosion 80%	Soil erosion 93%	Movement of irrigation water away from this region 100%
	2	Movement of irrigation water away from this region 81%	Crop weed resistance to herbicide 73%	Absence or poor quality of important services and infrastructure 79%	Quality of water in farm dams during drought 79%	Low biological activity in soils 77%	Declining nutrient status of soils 79%	Soil erosion 88%	The impact of pest plants and animals on native plants and animals 90%	Low biological activity in soils 77%	Risk to life and property from wildfires 76%	Low biological activity in soils 92%	Modernisation of the irrigation system as part of water reform 77%
	3	Quality of water in farm dams during drought 77%	Changes in seasonal weather patterns 70%	Modernisation of the irrigation system as part of water reform 79%	Risk to life and property from wildfires 77%	Low organic carbon in soils 76%	Quality of water in farm dams during drought 79%	Absence or poor quality of important services and infrastructure 83%	Changes in seasonal weather patterns 83%	Crop weed resistance to herbicide 74%	Low biological activity in soils 73%	Quality of water in farm dams during drought 90%	Crop weed resistance to herbicide 71%
	4	Crop weed resistance to herbicide 75%	Quality of water in farm dams during drought 70%	Uncertain/ low returns limiting capacity to invest in my property 77%	Soil erosion 75%	The impact of pest plants and animals on native plants and animals 75%	Risk to life and property from wildfires 78%	Public support for agricultural activities/ practices 80%	Low organic carbon in soils 82%	Changes in seasonal weather patterns 73%	Declining nutrient status of soils 70%	Low organic carbon in soils 87%	Quality of water in farm dams during drought 67%