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# **SOCIAL RESEARCH TO MOTIVATE DISENGAGED LANDOWNERS: A SUMMARY**

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**VICTORIAN SERRATED TUSSOCK  
WORKING PARTY (VSTWP)**

## Social Research Project Summary

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## INTRODUCTION

This report provides a summary of social research commissioned by the Victorian Serrated Tussock Working Party (VSTWP) and funded by the Australian Government to identify ways to meeting the challenges of “*motivating disengaged landowners who are apathetic about Serrated Tussock control (ST)*”. A more extensive report is available from the VSTWP. The VSTWP is a not for profit organisation established in 1995 in response to community concerns about the impacts of ST. The VSTWP comprises community members and other stakeholders, including members of the State Government, Catchment Management Authorities (CMA), Local Government, Landcare, VicRoads and Vline/ VicTrack [refer to Appendix 1 for a list of VSTWP members].

Most ST infestations in Victoria are located in an area to the south and west of Melbourne, inside an arc stretching from Torquay, south of Ballarat and around to Ballan, Wallan and Whittlesea (these are the Core infestations). By 2012, DPI had identified a Containment line along that arc. An updated map for 2017 is provided as Map 1. Other ST infestations occur across Victoria, with isolated “hot spots” in Gippsland, North East, North Central and South West regions.

The 2012-2017 VSTWP strategy identified three containment principles:

1. Surveillance and treatment for eradication of infestations outside the Core;
2. Containment along the perimeter of the Core; and
3. Managing pathways of spread from the Core (VSTWP & DPI 2012).

Professor Allan Curtis was engaged to lead the social research project. Allan undertook an extensive literature review and facilitated workshops where VSTWP members and key staff (e.g. VSTWP extension staff) identified:

1. Priority areas for activity by the VSTWP within the Core and along the Containment line.
2. Five landowner types within the priority areas and their attributes.
3. Ways of effectively engaging landowners in the control of ST.

## KEY IDEAS FROM THE LITERATURE TO GUIDE VSTWP ENGAGEMENT WITH LANDOWNERS

The literature review drew upon social research theory related to landowner decision making and contemporary empirical studies in three Victorian NRM regions (but not the Port Phillip & Westernport region). Two of those regions include or adjoin much of the Core and Containment line (i.e. Corangamite and North Central regions).

The workshops were used to address the three Key Questions:

1. What are the priority areas for activity by the VSTWP?
2. Who are the landowners within the priority areas and what are their key attributes?
3. How can the VSTWP effectively engage the key landowner types?

# Map 1: Distribution of Serrated Tussock infestations across Victoria 2017

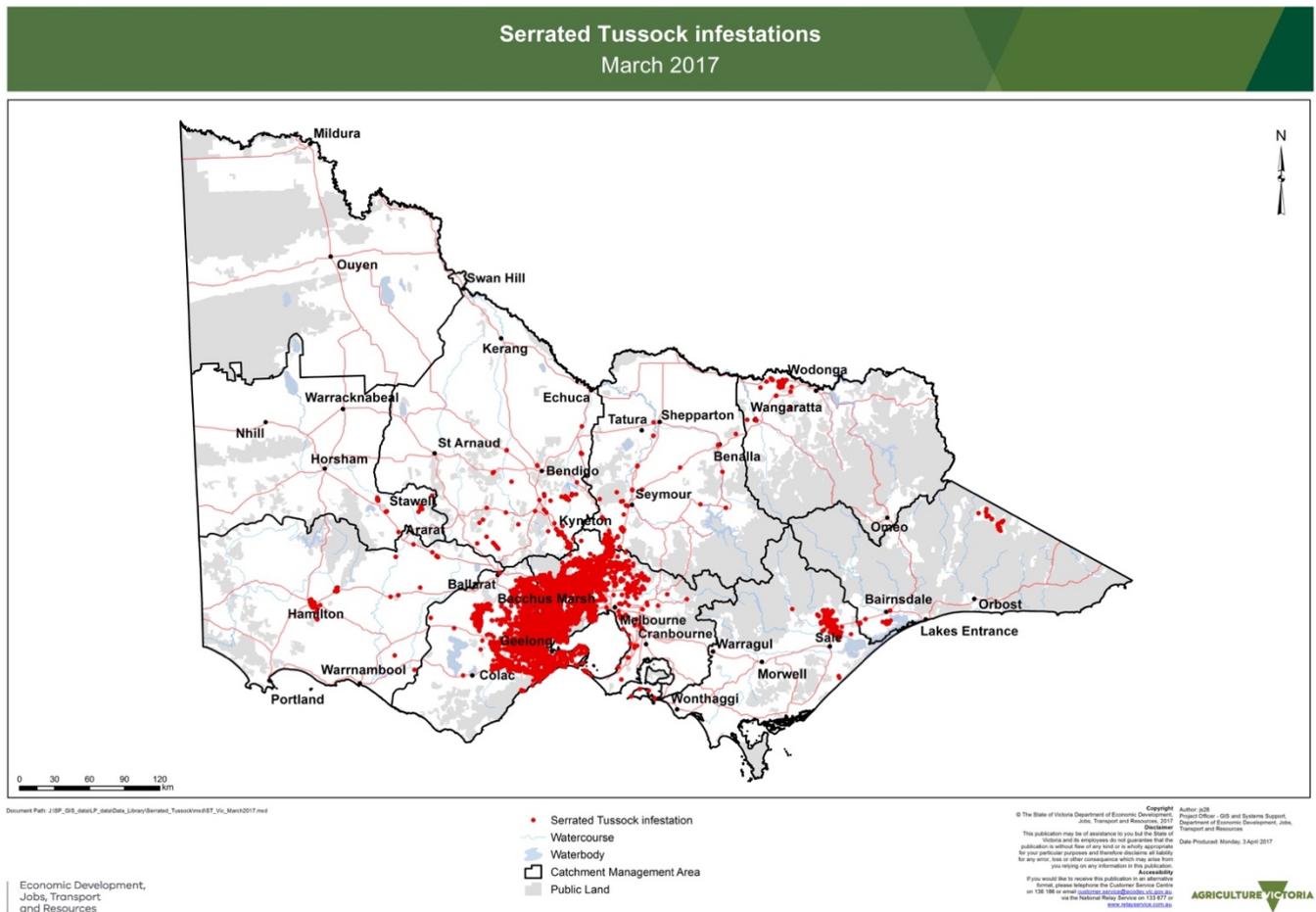
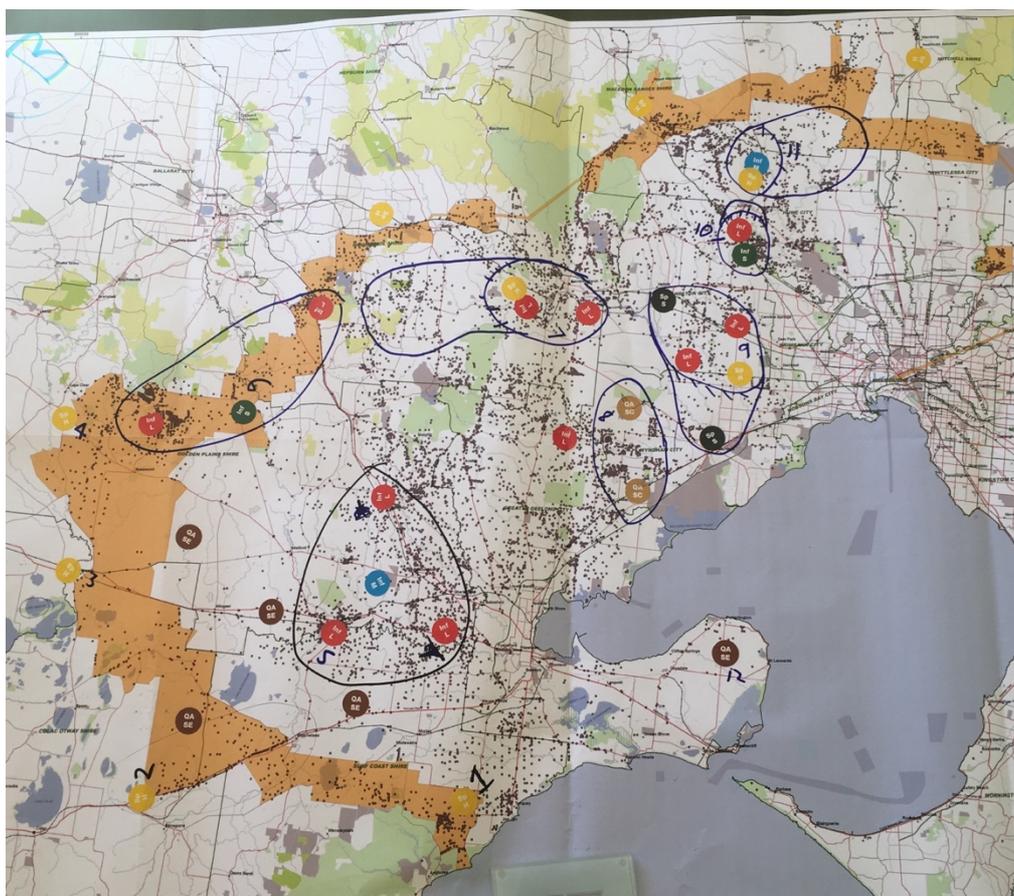


Photo 1: VSTWP participants at Workshop 1



Photo 2: VSTWP Map of Serrated Tussock “hot spots” in and adjacent to the Core



## THE LITERATURE REVIEW: SOCIAL THEORY AND EMPIRICAL EVIDENCE TO SUPPORT VSTWP ENGAGEMENT WITH LANDOWNERS

### ***An introduction***

The review presented here is a relatively brief summary of a large body of literature examining rural landholder decision making related to sustainable farming. The review draws on relevant social theory and empirical studies (specifically Curtis et al. 2006; Curtis and Mendham 2012, 2015, 2017; and RMCG 2013) to identify key ideas or principles to guide the VSTWP as they develop and implement their next strategic plan and communication strategy. The review is therefore presented as a narrative beginning with the challenge of responding to a complex reality (i.e. diversity of landowners and changing social structure), with the key ideas or principles that enable practitioners to take action with confidence highlighted using text boxes.

### ***Lay definitions of key concepts***

Values: guiding principles/what is important to people.

Beliefs: what we think is true.

Norms: how we/others think we ought to behave. These can be personal norms or social norms.

Attitudes: what we think should happen in relation to a specific social issue.

Knowledge: grasp of facts, understanding of process.

Skills: ability to implement or perform a task.

Trust: willingness of those who are vulnerable to rely on others, which in part depends on the trustworthiness of those seeking to be trusted.

Human capital: embraces the attributes of a population, its training and skills, health and cultural diversity.

Social capital: refers to the attributes of relationships (e.g. trust, social norms, reciprocal relationships, networks) established in a community that enables participants to act together more effectively.

## **THE NARRATIVE: MAKING DECISIONS ABOUT HOW TO ENGAGE RURAL LANDOWNERS IN NRM**

Rural landowners are key stakeholders in regional NRM because they own most rural land in Victoria; their management actions directly influence the condition of soil, water and vegetation; and in turn, the condition of those assets influences their livelihoods, well-being and wealth. Changing human behaviour can be difficult, and engaging rural landowners in practice change is no exception. There is a large set of possible factors influencing landowner decisions and these vary according to each technology, each landowner, each farming context, over time and with the nature of any intervention.

Unless there are strong economic drivers supporting adoption, effecting change is often problematic because the private benefits of action by rural landowners to address environmental degradation are often uncertain. There is also limited commitment by governments to legislate and then enforce compliance or directly fund onground work. With most of the remaining NRM issues, the way forward is often uncertain (i.e. where we are headed and how to get there).

Further complicating the task for NRM practitioners is the scope and pace of social change in rural areas, including south eastern Australia. As conceptualised by the Multifunctional Rural Transition (Holmes 2006), many rural areas are increasingly shaped by a mix of production (e.g. agriculture), consumption (e.g. recreation) and conservation values (Barr 2005).

Agriculture typically remains the dominant land use in most rural areas, but primary production is often not the principal focus of all, or even a majority of landowners. In areas where agricultural enterprises continue to be the dominant land use it is often difficult for local people and NRM practitioners to identify that their social landscape has changed and therefore, respond effectively to the challenges of engaging landowners (Rawluk and Curtis 2016.) The extent and pace of these changes is particularly acute in the VSTWP Core and adjacent to the Containment line. There are typically more landowners with more diverse

interests, increased numbers of smaller land parcels, more diverse land uses/ enterprise types, more non-resident landowners and more landowners with limited understanding of NRM and connection to existing NRM networks (Abrahams and Bliss 2013).

A large set of possible factors can influence landowner decisions, and these vary according to each practice, each landowner, each farming context, over time and with the nature of any intervention.

Many rural areas are increasingly shaped by a mix of production (e.g. agriculture), consumption (e.g. recreation) and conservation values. This trend to multi-functional landscapes further complicates the challenge of engaging landowners in NRM.

In multifunctional landscapes where agriculture continues as the dominant land use it is difficult for local people and NRM practitioners to realise their social landscape has changed.

Pannell (2011) provides a useful framework for selecting policy instruments based around the adoptability of the technology (i.e. land use or management practice); and the relative costs of different approaches, including transaction costs. Curtis and Lefroy (2010) expanded on Pannell's advice by emphasising the extent that NRM occurs in modified environments (i.e. the objective should not be restoration to pre-1788 condition) where we often don't know "Where we are headed?" or "How to get there?" They argue that under those circumstances it is important to engage landowners (and other stakeholders) in dialogue, learning and action which typically involves engaging and building human and social capital.

When selecting policy instruments consider whether there is a best-practice; the adoptability of that practice; and the relative costs of different approaches to achieving the desired level of adoption.

Where NRM practitioners are confident about the appropriateness of the outcomes they are seeking and the science that links proposed interventions and desired outcomes, they can apply best-practice recommendations. If that is the case, then practitioners need to make an assessment of the adoptability of those practices by rural landowners. For example, if awareness, knowledge or management skills are an important constraint, then activities that

address relevant issues are appropriate. If the constraint is lack of confidence in a recommended practice, perhaps because elements of the technology are unproven or complex, then activities to trial those practices in the local area might be appropriate. If the issue is that the change involves considerable expense and appears to offer limited financial returns to landowners, then some form of cost-sharing between government and private landowners might be appropriate.

In the case of Serrated Tussock management there are widely accepted best-practices that include physically removing tussocks (i.e. by hand), mostly on small infestations or sites that are difficult to access, cultivation of paddocks (most relevant to cropping or pasture renovation contexts) and spraying with herbicides (application from the ground or air using helicopters). As is illustrated in the text box below, the VSTWP has identified important constraints to the adoption of best-practice management for Serrated Tussock in the Core and Containment line.

### **Constraints to adoption of best-practice Serrated Tussock management identified by VSTWP members**

- Economic returns from implementing control measures for landowners who are not croppers.
- Social acceptability of aerial spraying of herbicides (unacceptable risks for human health and environment).
- Some landowners are not aware of biodiversity impacts of Serrated Tussock.
- Some landowners don't know how Serrated Tussock can be controlled
- Access to spray equipment for those with small properties.
- Competency in chemical handling for Non-farmers.
- Those with off-property work often have more important priorities (e.g. work, family, recreation).
- Older property owners may find it physically challenging to work in dissected valleys and rocky hills.
- Concerns amongst farmers that Serrated Tussock is developing resistance to herbicides.
- Land bankers and developers are not aware of Serrated Tussock status or their responsibilities.

NRM practitioners need to identify where (i.e. the geography) they want to engage and understand the key attributes expected to influence landowner implementation of best-practice management.

Given the spatial variation in landowner attributes [refer to Tables 6&7], NRM practitioners need to identify where (i.e. the geography) they want to engage landowners. The next step is to understand the key attributes expected to influence landowner implementation of best-practice management.

Values–Beliefs–Norms (personal) (VBN) theory (Stern 2000) proposes that an individual's behaviour is derived from core elements of personality and belief structures. These inform people's specific beliefs about human-environmental interactions, consequences and an individual's responsibility for taking action.

VBN and related theories arising from the Theory of Planned Behaviour are adequate for explaining the conservation behaviours of the general public, but do not account for the larger set of factors influencing decisions by rural landowners (Pannell et al. 2006). While it is possible that values, beliefs and personal norms (VBN) may mediate or moderate some of these other factors, it is difficult to change these attributes (i.e. VBN) in the short or medium term. At the same time, research has identified what can be considered "levers" to effect change (e.g. knowledge, skills) and processes or platforms that are effective for engaging landowners in learning, dialogue and action (e.g. Landcare and commodity groups). Government programs that engage landowners, including through cost-sharing where there are public benefits from work on private property, can also have a positive influence on adoption. At the same time, it is important to acknowledge that much of the work on private property to implement best-practice environmental management is not funded by government.

Individuals can hold more than one value orientation simultaneously (Lockwood, 1999; Stern, 2000). This is an important point and one consistently confirmed by results of social benchmarking surveys across Victoria. Indeed, across all regions, almost all respondents give a high rating to items measuring social (dark blue shading), economic (medium blue shading) and environmental (light blue shading) held and attached values [refer to Table 1]. The highest rated held value item in both regions is *Looking after my family and their needs*. This is another important point for NRM practitioners and highlights the reality that most landowners have commitments beyond NRM and when there is a conflict between values, family is likely to come first, as might occur during a drought (e.g. selling stock when prices are low or running the risk of over-grazing) or when landowners are asked to engage in NRM activities on weekends if they have family at home.

There are also some important differences in the values of landowners, and as is discussed below, in many ways these differences are focused around occupational identity. As might be expected, farmers give greater priority to the viability of their farm business. Some beliefs and attitudes related to private property rights appear to be important for a minority of landowners who are likely to be amongst those identified by the VSTWP as "difficult to engage" [Table 2]. Indeed, data in Table 2 suggests that about one in four respondents thought private property

rights trumped legal requirements to protect native vegetation. On a positive note, data in Table 2 suggests this proportion of rural landowners is declining.

Social norms are an important but often neglected aspect of a community's social capital. Of course, social norms can be both positive and negative influences on NRM (Minato et al. 2010). Indeed, a key outcome of Landcare participation has been the establishment of social norms about what sustainable farming involves in a local context (Curtis et al. 2014). Those attempting to address negative social norms or establish positive social norms need to think through how that might be accomplished.

Trust is another important element of the social capital of organisations, whether they be government agencies, private businesses or volunteer organisations. Where trust in an organisation is high, partners will be more likely to accept advice, enter partnerships to develop and implement plans, forgive mistakes and provide positive recommendations to others (Sharp and Curtis 2014). A key point from the limited number of studies examining landowner trust in NRM organisations is that many rural landowners are not pre-disposed to trust others (e.g. Curtis and Mendham 2017).

Across all regions, almost all respondents to Victorian social benchmarking surveys give a high rating to items measuring social, economic and environmental held and attached values.

Almost all landowners give a high priority to *Looking after my family and their needs* and *Being able to pass on the property in better condition*. Different people attach different meanings to these values, but they provide the foundations for effective engagement with landowners.

There are landowner attributes that are relatively stable but provide critical information for effective engagement (e.g. values, beliefs) and other attributes that are more responsive and can be the “levers” to effect change (e.g. awareness, knowledge and skills, confidence in practices).

Interventions that focus on engaging and building human and social capital, including through one-to-one extension, participation in groups, and involvement in short courses and field days have positive effects on adoption.

About one in four rural landowners will be reluctant to engage in Serrated Tussock management if their property rights are threatened or appear to be threatened. This group is becoming a smaller proportion of landowners.

**Table 1: Most landowners give a high rating (i.e. important) to social, economic and environmental held and attached values (North Central Social Benchmarking survey 2014, Wimmera Social Benchmarking Survey 2016)**

<b>Held value statements</b>	<b>NRM region</b>	<b>% Important</b>
<i>Looking after my family and their needs</i>	Wimmera	94% #1
	North Central	92% # 1
<i>Creating wealth and striving for a financially profitable business</i>	Wimmera	82% #2
	North Central	65% #5
<i>Protecting the environment and preserving nature</i>	Wimmera	72% #3
	North Central	68% #3
<i>Preventing pollution and protecting natural resources</i>	Wimmera	73% #4
	North Central	74% #2

<b>Attached value statements</b>	<b>NRM region</b>	<b>% Important</b>
<i>Being able to pass on the property in better condition (Wimmera) Ability to pass on a healthier environment for future generations (North Central)</i>	Wimmera	87%
	North Central	82%
<i>Sense of accomplishment from building/ maintaining a viable business</i>	Wimmera	82%
	North Central	74%
<i>An attractive place to live</i>	Wimmera	79%
	North Central	78%
<i>The environment on my farm sustains life for many different plants and animals (Wimmera) Native vegetation provides habitat for birds and animals (North Central)</i>	Wimmera	64%
	North Central	62%
<i>Opportunity to learn new things</i>	Wimmera	61%
	North Central	59%
<i>A place for recreation</i>	Wimmera	55%
	North Central	56%

Government programs that engage landowners, including through cost-sharing where there are public benefits from work on private property, can also have a positive influence on adoption.

The limited number of studies examining landowner trust in NRM organisations suggests that many rural landowners, especially farmers are not pre-disposed to trust others.

About 5% of rural properties in Victoria have a new owner each year and new owners are different. This trend represents a challenge and an opportunity for NRM. It may be easier to engage new owners in biodiversity conservation, but new owners are typically less experienced and knowledgeable about NRM and less connected to traditional extension.

An increasing proportion of non-farmer landowners within regions is a key indicator of the trend to multi-functionality.

Farmer identity is positively correlated with engagement by NRM practitioners and the adoption of best-practices, including some biodiversity conservation practices. That farmers adopt some biodiversity conservation practices more than non-farmers suggest that time on property, knowledge and experience, engagement through networks and positive social norms in local communities are influential. However, NRM programs are not engaging non-farmers as effectively.

Research by Curtis and Mendham (2012; 2015; 2017) suggests that landowner occupation, particularly the distinction between farmers and non-farmers, is a key indicator of multifunctionality. Occupational identity is also an important attribute influencing the ability of NRM practitioners to engage landowners and their adoption of best-practices for sustainable farming and biodiversity conservation. Information in Table 3 confirms there is an increased proportion of rural landowners identifying as non-farmers by occupation. Map 3 and Tables 6&7 illustrate the extent this and other trends are spatially differentiated, with the extent of change varying significantly across Local Government Areas (LGA).

An associated trend is for considerable change in property ownership, estimated at 4% to 5% per annum across Victoria, including the regions surrounding the VSTWP Core and Containment line (Mendham and Curtis 2010; RMCG 2013). That rate of change suggests that 40-50% of rural properties will change ownership in a decade. New and longer-term property owners are different, and those differences present both a challenge and opportunity for NRM practitioners. For example, new owners are typically less experienced and knowledgeable about NRM and less connected to existing NRM networks. At the same time, new owners are typically more committed to environmental values and less reliant on on-property income and are often seeking advice about ways to better manage their properties. The VSTWP has identified new owners as a group of landowners who might be interested in learning about ST management.

Given the diversity of landowners, social researchers advising NRM practitioners have developed typologies that distinguish groups/ types based on key attributes.

## LANDOWNER TYPOLOGIES AS A WAY FORWARD FOR NRM PRACTITIONERS

One of the responses of social researchers tasked with advising practitioners on effective landowner engagement is to develop typologies that distinguish groups/ types based on key attributes. Those attributes might include the main industry (e.g. forestry or farming), enterprise (e.g. dairy, beef, sheep, horticulture), land type (e.g. floodplains or hills), management approaches (irrigation or dryland, adoption of conservation practices), property types (large or small), and/or personal characteristics such as values or attitudes. Researchers can employ qualitative and quantitative data to develop typologies.

Typologies appeal as a useful aid if they include all landowners (e.g. not just farmers by occupation); are soundly based (i.e. grounded in relevant theory); and are constructed using reliable methods (e.g. not based on the intuition of researchers). Unfortunately, there are few examples where those criteria have been met.

**Table 2: Trends over time in landowner beliefs and attitudes related to private property rights (Wimmera Social Benchmarking Surveys 2002-2016)**

<b>Belief and attitude statements</b>	<b>Year</b>	<b>% Agree or Disagree</b>
<i>Landholders should have the right to harvest water that falls on their property, even if that action impacts on others</i> <u>"Improved" and significant change</u>	2016	42% Agree
	2011	46% Agree
	2007	56% Agree
	2002	N/A
<i>New owners should abide by agreements entered into by previous owners where public funds have paid for land protection or conservation work</i> <u>No change</u>	2016	15% Disagree
	2011	17% Disagree
	2007	14% Disagree
	2002	N/A
<i>Landholders should have the right to crop floodplains or wetlands on their property regardless of the impacts on native plants and animals</i> <u>No change</u>	2016	23% Agree
	2011	23% Agree
	2007	N/A
	2002	N/A
<i>It is fair that the wider community asks landholders to manage their land in ways that will not cause foreseeable harm to the environment</i> <u>"Less supportive but not significant change</u>	2016	27% Disagree
	2011	26% Disagree
	2007	21% Disagree
	2002	N/A
<i>Clearing native vegetation since European settlement has substantially reduced the number and variety of native plants and animals in this district</i> <u>"Improved" but not significant change</u>	2016	19% Disagree
	2011	21% Disagree
	2007	25% Disagree
	2002	N/A

**Table 3: Trends over time in social structure, Wimmera region Social Benchmarking Surveys 2002, 2007, 2011, 2016**

Attribute	Year	
<i>Median property size (owned and managed by immediate family)</i> <u>Decreased</u>	2016	756 ha
	2011	600 ha
	2007	630 ha
	2002	900 ha
<i>Principal place of residence on property (% absentee landholder)</i> <u>Increased</u>	2016	N/A
	2011	28%
	2007	22%
	2002	N/A
<i>Occupation (% identified as a farmer)</i> <u>Decreased</u>	2016	59%
	2011	56%
	2007	69%
	2002	80%

Researchers exploring the transition to multi-functional landscapes have identified occupational identity as a key element of that process, and have highlighted differences in the motivations and management practices of farmers and those with other occupations. Occupational identities are just one of many collective identities that individuals hold.

As part of her PhD, Theresa Groth included a series of items (i.e. a scale) in the 2014 North Central social benchmarking survey (Curtis and Mendham 2015) that were based upon the Collective Identity Construct (CIC). The CIC is based on identity theory and contains seven distinct dimensions that measure the relative strength of an individual's collective identity (Ashmore et al. 2004). The CIC has been widely cited (> 900 times). Theresa's Farmer Collective Identity Construct scale (FCIC) (Groth et al. 2016) has 12 items across the seven CIC dimensions (i.e. self-categorisation; behavioural involvement; evaluation; importance; social embeddedness; attachment and sense of independence).

The technical report for the North Central study (Curtis and Mendham 2015) and five journal papers with Theresa Groth as the lead author, provide a comprehensive explanation of how the FCIC scale was developed; the items included; the results of tests of scale reliability and validity; the approach to typology development; characteristics of the four types of landowners; and implications for NRM [refer to Tables 4&5].

The key points for readers are that:

1. Theresa Groth has established a valid and reliable typology based on her 12-item scale measuring farmer occupational identity.
2. Analyses using the FCIC have established that farmer identity is an important influence on land use and management.
3. Part-time farmers are an important cohort, distinct from Hobby farmers and closer to Full-time Farmers in that they typically have a strong business focus.
4. Occupational identity varies spatially with distance from Melbourne and Bendigo, across the three key environmental assets identified by the North Central Regional Catchment Strategy and with the agricultural capacity of land (refer to Groth and Curtis 2017).
5. Theresa Groth's typology provides a useful guide (heuristic) for NRM practitioners setting out to engage rural landowners.

Map 2 illustrates the proportion of North Central social benchmarking respondents in each LGA who self-identified as Full-time farmers, Part-time farmers and Non-farmers. This map is not based on FCIC scores but is included because the classification used (Full-time farmer; Part-time farmer; Non-farmer) is close to the typology developed by the VSTWP at the first Workshop at Bacchus March in February 2018 (refer to the later section where the key questions identified by the VSTWP are addressed).

Theresa Groth has developed a four-category typology based on identify theory that distinguishes landowners according to the extent they identify as a farmer. This typology has been applied in several Victorian regions and appears to be a useful guide for NRM practitioners setting out to engage landowners. The VSTWP developed a five-category typology that is consistent with Theresa's typology.

Information provided by the Victorian social benchmarking surveys provide useful information for those setting out to engage rural landowners, including the VSTWP. When combined with the knowledge and experience of local practitioners (e.g. VSTWP extension staff), local organisations should be on a sound footing. It is also important that local practitioners record information about the landowners they engage so that they and their colleagues have an expanding set of data to inform their approach to engagement. A limited set of topics is suggested, including:

1. Enterprise and land use.
2. Landholder type based on occupational identity.
3. Resident or absentee owner.
4. Stage of life (e.g. family commitments).
5. Involvement in local networks.
6. Motivation for owning the property.

7. Long-term plan for the property (e.g. stay; sell; expand).
8. Level of commitment to environmental stewardship (values and behaviours).
9. Attitudes about private property rights.
10. Capacity to manage ST (awareness, knowledge, skills, equipment, physical ability).

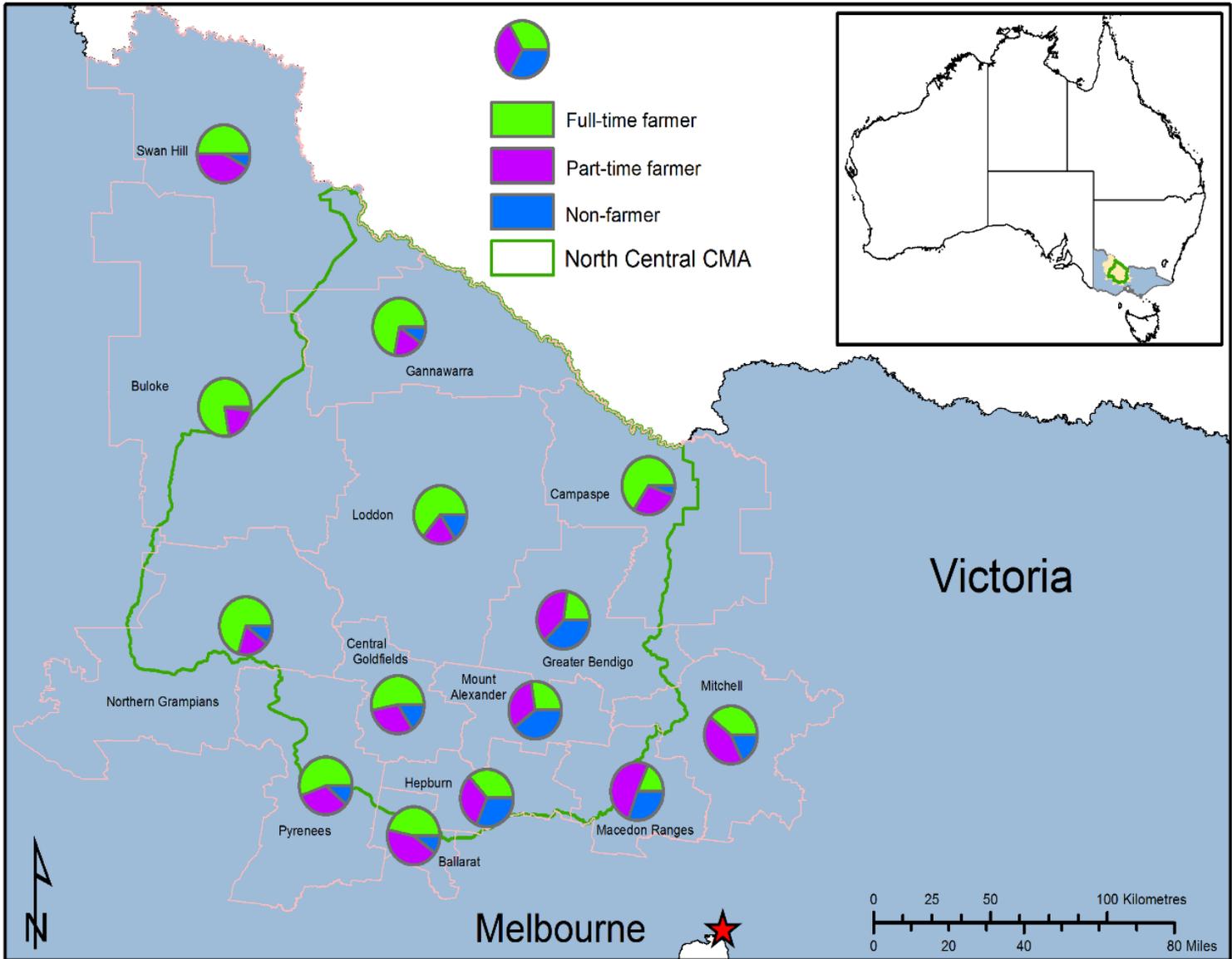
**Table 4: Theresa Groth’s landowner typology based on farmer identity (North Central Social Benchmarking Survey 2014)**

Type	% all rural landholders	Property size (median)	Hours worked on property per week (median)
Full-time farmers	48%	770 ha	>35 hours
Part-time farmers	31%	100 ha	<17-34 hours
Hobby farmers	11%	31 ha	16 hours
Non-farmers	10%	20 ha	<16 hours

**Table 5: Descriptions of Theresa Groth’s 4 landowner types (North Central Social Benchmarking Survey 2014)**

Full-time farmers	Strong belief about the worth of being an agricultural producer. Emphasise the values of producing food and fibre and building a viable business. Most likely of all clusters to be resident owners, members of Landcare, report a profit and plan for family succession. Least likely to accept that rural landholders have a duty of care for biodiversity and least predisposed to trust others
Part-time farmers	Identify as agricultural producers. Greater focus upon production rather than conservation or recreation. More likely than Hobby or Non-farmers to earn a profit, be involved in Landcare and hold attitudes related to maintaining private property rights.
Hobby farmers	Neutral about identifying as an agricultural producer. Principal focus is on conservation and recreation values of their property. More likely than Non-farmers to be resident owners and report on-property profit.
Non-farmers	Do not see themselves as agricultural producers. More likely to focus on recreation and biodiversity values of their property.

Map 2: Distribution of Full-time farmers, Part-time farmers and Non-farmers as self-declared: North Central region (Curtis and Mendham 2015)



## RESPONSES TO THE THREE QUESTIONS POSED BY THE VSTWP

### 1. What are the priority areas (i.e. “hot spots”) for engagement within the Core and Containment line?

#### Merged list of Serrated Tussock “Hot spots” in the Core identified by VSTWP VSTWP workshop, Bacchus Marsh, February 5, 2018

14 “hot spots”	Location description	Additional notes (if provided)
<b>A</b>	Whittlesea to Wallan <i>Group A #1</i>	Some farmland that is cropped so low risk of ST spread with exception of road corridor toward the north, pastures and grazing at risk.
<b>B</b>	Monegeeta to Bullengarook <i>Group A #2 &amp; 3; Group B #11</i>	Forest to north lowers risk of spread
<b>C</b>	Wombat Forest to Greendale <i>Group A #4</i>	Very mixed set of landowners: broadacre farmers (PT professionals and FT farming families), lifestylers/ tree changers, considerable commuting to Melb and Ballarat, forest buffer, good rainfall.
<b>D</b>	Ballan to Lal Lal <i>Group A #5</i>	High value agriculture, good soil, good competition, higher rainfall.
<b>E</b>	Lal Lal to Dereel <i>Group A #6 &amp; 7; Group B #6</i>	Forested and patchy farms.
<b>F</b>	Dereel to Torquay: Western Plains <i>Group A #8; Group B #2, 3 &amp; 4</i>	Good farming. Includes Princes Highway west of Melbourne, so Cressy and Rokewood.
<b>G</b>	Torquay area <i>Group A #9; Group B #1</i>	Mixed farming, good landcare support.
<b>H</b>	Sunbury/ Diggers Rest <i>Group A #10; Group B #10</i>	Hotspot with severe infestations.
<b>I</b>	Lethbridge <i>Group A #11; Group B #5</i>	
<b>J</b>	Stonehaven/ Inverleigh (West of Geelong) <i>Group A #12; Group B #5</i>	Lots of previous extension.
<b>K</b>	Western Grasslands Reserve <i>Group A #13; Group B #8</i>	
<b>L</b>	Bacchus Marsh/ Rowsley <i>Group A #14 (15 on map); Group B #7</i>	Very heavy infested area, lower rainfall, marginal country.
<b>M</b>	Bellarine <i>Group B #12</i>	Low priority
<b>N</b>	Melton/ Werribee <i>Group B #9</i>	

## **2. Who owns/ manages the land in the priority “hot spots” within the Core and along the Containment line?**

### **Process and outcomes described:**

After settling on merged set of “hot spots” for ST management in the Core, workshop participants explored the extent a common set of landowners/ managers could be identified. As the group recognised, there is a very diverse population of rural landowners/ managers in the Core and their decisions and actions are shaped by many factors. However, by focussing on specific “hot spots” the group was able to identify a limited number of key attributes thought to influence and/or be indicators of landowner/ manager capacity and commitment to ST management. Those key attributes included:

1. Extent of a farmer identity and associated commitment to commercial agriculture.
2. Importance of environmental values.
3. Time spent on property as influenced by commuting to work and absentee ownership.
4. Participation in platforms such as Landcare.
5. Engagement by STWP extension staff.
6. Land use/ enterprise type, especially if it involves cropping.
7. Property size.

Landowner typologies can provide a useful heuristic (rule of thumb) to support those attempting to engage rural landowners/ managers in natural resource management (NRM). That is, sound typologies can help overcome the issue of diversity in landowner/ manager commitment (motivation) and capacity (ability). Typologies can help by supporting decisions about the mix of policy instruments (e.g. prescription, penalty, persuasion, property rights (and markets) and payment) to select to achieve program/ project objectives in a specific context. Of course, an extension officer attempting to engage individual landowners/ managers need to focus on the attributes of that person.

Drawing on the information on the whiteboard the group settled on a 5 cohort typology of landowners/ managers relevant to ST management in the Core. This typology was expected to be relevant across Victoria. The five landowner/ manager cohorts are:

1. Broadacre/ mixed farming with a commercial focus (could be owner operated, leased or leased out);
2. Small holding with a commercial focus;
3. Small holdings with a non-commercial focus;
4. State and local government departments/ agencies (waterways, rail/ roads, parks/ reserves); and
5. Land bankers (corporate and family business ownership structures; Australian residents and foreign entities, with an important Chinese sector).

The final step was to split into two groups and describe the attributes of the five owner/manager types [refer to Tables 6a to 6e]. Each group was encouraged to identify and describe different subgroups.

### **3. How to effectively engage the key landowner within the Core and along the Containment line?**

This question was addressed at two the workshops with the VSTWP and the later workshop with VSTWP staff, Landcare coordinators and Surf Coast Shire staff. Much of the discussion with the VSTWP focussed on using knowledge of the attributes of each landowner type (and subgroups) to address questions about:

1. “What was in it” for each landowner type (and subgroups);
2. The constraints to adoption of best-practice for each landowner type (and subgroup);
3. The “bait” or appeals that might be effective for each type (and subgroup).

Simon Curtis also emphasised the importance of identifying “what works” or the “secrets of success” for each landowner type.

The outcomes of those discussions are presented in Tables 6a to 6e. That information provides useful advice for the VSTWP.

At the workshop with VSTWP staff, Landcare coordinators and Surf Coast Shire staff, participants identified a number of issues faced when engaging landowners. We have included examples of two of those issues and a summary of ideas about how each might be addressed.

#### Issue 1: How to engage those that don't want to be engaged?

- Think strategically: do you really need to engage this landowner to achieve the project/ program objectives? Do you need to achieve that work at this point in time? Remember, properties change hands over time and new owners may be easier to engage.
- Why do you think this landowner is difficult to engage? Can you effectively address those constraints?
- Landowners will value their property for a variety of reasons. What is important to this landowner? What appeals are likely to be effective for this landowner?
- Most landowners are connected to others. How is this person connected to others? Does that information provide a way in?

#### Issue 2: How to reach key audiences and avoid ‘preaching to the converted’?

- The first step is to identify who needs to be engaged? That is, which properties and then classify the landowners according to their key attributes (resident/ absentee; farmer/ non-farmer).

- The next step is to identify why those types of landowners would be interested in what is being offered and the extent there are any constraints to them participating. This step could include a description of their values, beliefs, attitudes, awareness, knowledge, management skills, stage of life, attitudes about private property rights, engagement in networks.
- With that information, it should be possible to develop a communications or engagement plan.
- It is then important to track or monitor who is engaged in the project to ensure that those who you set out to engage, are engaged (and not the “usual suspects”).

**TABLE 6A:**

**Attributes of owner/ manager types: Commercial broadacre farmers  
STWP workshop, Bacchus Marsh, February 5, 2018**

<b>SUB TYPE</b>	<b>COMMITMENT TO CONTROL ST</b>	<b>CAPACITY TO ACT TIME \$ PHYSICAL</b>	<b>BENEFITS FOR THEM</b>	<b>WHY NOT</b>	<b>VALUES, BELIEFS, NORMS</b>	<b>OTHER</b>
Broadacre mixed farming	To agriculture in the north thru corridor.	High	Increased productivity Seen as good neighbour	Low priority Don't know Seasonal conditions	Profit objective	Involved in many networks (e.g. Landcare, VFF, CFA, SES, Coast Care)
Grazing unimproved/ marginal land	Should be a high priority but not the case	High	Increased productivity Seen as good neighbour	Low priority Don't know	Belief in private property rights/ freedom to act	
Cropping only	Low	High	Seen as good neighbour	No commercial gain		
Grazing on improved pasture	Generally High as serrated tussock reduces productivity.	High, it is part of the process of pasture improvement and productivity	Increased productivity	Low density serrated tussock is often not seen as a threat	Profit objective	Most likely and increased industry focus. John Wedd Ware would be able to provide further and more accurate details 0418 748 600 j.webbware@unimelb.edu.au

**TABLE 6B:**

Attributes of owner/ manager types: Small acreages with a commercial focus  
STWP workshop, Bacchus Marsh, February 5, 2018

SUB TYPE	COMMITMENT TO CONTROL ST	CAPACITY TO ACT			BENEFITS FOR THEM	WHY NOT	VALUES, BELIEFS, NORMS	OTHER
		TIME	\$	PHYSICAL				
Active weed control	Yes	Yes/ No	Yes	Yes	Land value Productivity Stewardship Avoid compliance Rate rebate where available	They are	Weeds are inherently bad / Productivity / Environment	Probably engaged in NRM and other networks
Not active weed control	No, but some could be	Yes/ No	Yes	Yes		Don't know impact of ST May be outside core business if not focussed on pasture production (e.g. glass house; free range chooks)	Don't know / Don't want to know / Don't see it as their problem / Have other higher priorities / Don't care to know	Probably not engaged in relevant networks or the local community. / Part of the community by default (land ownership). / Lack of community cohesion

**TABLE 6C:**

**Attributes of owner/ manager types: Small acreages with a non-commercial focus  
STWP workshop, Bacchus Marsh, February 5, 2018**

SUB TYPE	COMMITMENT	CAPACITY TO ACT			BENEFITS FOR THEM	WHY NOT	VALUES, BELIEFS, NORMS	OTHER
		TIME	\$	PHYSICAL				
Treechanger	OK – need info	Yes	Yes	Yes/ No	Env stewardship	Lack information Access to chemicals Funds	Fear of chemicals Community (reaction?)	More likely to be in Landcare Have limited networks locally
Commuter	V limited/ low	No	Yes	Yes	Land value rise Avoid complaint Effort if undo control	Time poor Don't recognise ST Not a priority	Focus is not on land management. Value open space	Busy with day jobs
Affordable housing	Usually low	No	No	Yes/ No	Land value rise Avoid complaint Effort if undo control	Don't understand	ST not a priority	Busy with day jobs Lack information
Renter	Always low	Not Sure	No	Yes/ No	Stop getting hassled	Nothing in it for them	Not interested. Will cost and take up free time	Problem group
Hobby farmer	Big range	Yes	Not Sure	Yes/ No	Land value rise Avoid complaint Env stewardship	Don't recognise ST Don't understand issues	More likely to act if they understand	Usually not active in community
Investors buying to subdivide	Very limited	No	Yes	Yes/ No	Value of land Avoid compliance	Don't know	Focussed on profit maximisation	Want to subdivide or build at some stage. Not interested in land

**TABLE 6D:**

Attributes of owner/ manager types: Governments  
STWP workshop, Bacchus Marsh, February 5, 2018

SUB TYPE	COMMITMENT TO CONTROL ST	CAPACITY TO ACT TIME \$ PHYSICAL	BENEFITS FOR THEM	WHY NOT	VALUES, BELIEFS, NORMS	OTHER
Water Authorities	Should be the same as DELWP but funding issues	High	Happy residents/ landowners	Not a priority area Not asked to act	Job satisfaction important Action can be reinforced if staff know they are making a difference	Each organisation has substantial networks including: Other agencies Landcare Community Pest Management Groups Reserve Committees
Vic Roads and Vic Rail	High, especially outside core	High		Core is a lower priority		
Local Government	Variable with funds and interest			Lack of expertise No champions amongst councillors		
DELWP	Depends on neighbours and organisational priorities	High		Not been asked to act		
				Not been asked to act		
Parks Victoria	Should be the same as DELWP but funding issues	Medium, lack of \$ and coordination of effort				

**TABLE 6E:**

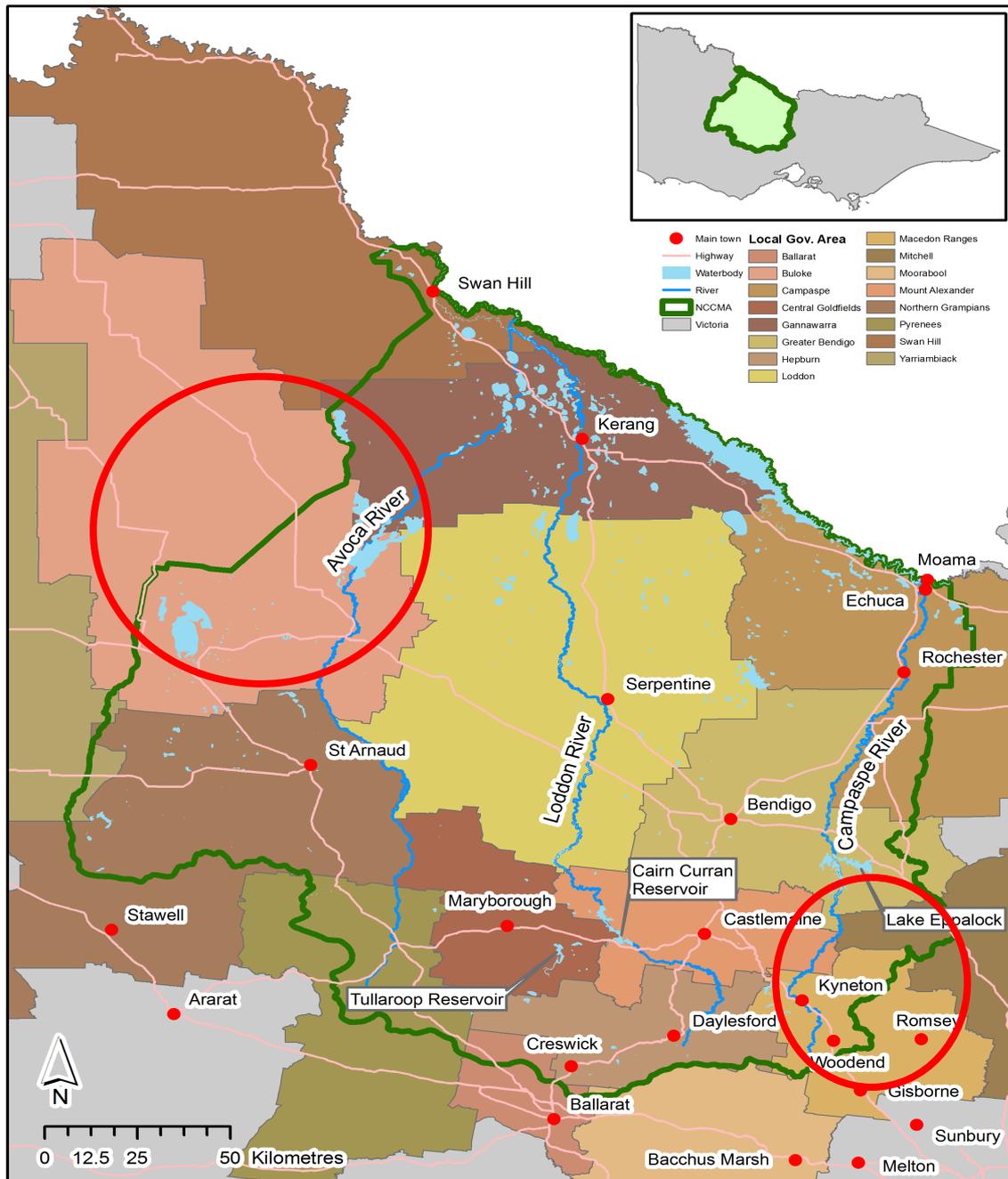
Attributes of owner/ manager types: Land bankers  
STWP workshop, Bacchus Marsh, February 5, 2018

SUB TYPE	COMMITMENT	CAPACITY TO ACT			BENEFITS FOR THEM	WHY NOT	VALUES, BELIEFS, NORMS	OTHER
		TIME	\$	PHYSICAL				
Individuals/ families	Minimal	No	Yes	No	Avoid compliance	Mostly not compelled to act	Very small subset accept corporate social responsibility	Not engaged an spend minimal funds on NRM
Corporates	Minimal	No	Yes	No				
Overseas entities	Minimal	No	Yes	No				

## NORTH CENTRAL CMA LGA PROFILES

As explained earlier, each landowner is different, and we have provided guidance about the key attributes that NRM extension staff need to consider when they approach individuals. However, it is not always feasible to directly engage individuals. We have suggested that landowner typologies provide a useful way of structuring engagement efforts. We have also explained that there are important spatial variations in landowner types (e.g. spatial variation in identity as a farmer is illustrated in Map 2). Spatial variation can be attributed to distance from Melbourne or major regional centres, soil types, access to irrigation or the type of environmental asset (related to both productivist, environmental and amenity values). In this summary report we have included two tables illustrating some of the key differences (and some similarities) between Local Government Areas (LGA) in the North Central CMA region. The NC CMA employs Local Government Areas (16) as their resource management units [Map 3]. Buloke and Macedon Ranges LGA have been selected as representative of the different social landscapes in the North Central region (e.g. close to Melbourne and remote from Melbourne and Bendigo; probably productivist and probably multi-functional) [Tables 6&7]. Macedon Ranges LGA is in close proximity to the VSTWP Core and Containment line. The full report (available from the VSTWP) includes illustrations of spatial variation for the Corangamite, North Central and Wimmera social benchmarking surveys.

Map 3: Local Government Areas (LGA) in the North Central region  
North Central Social Benchmarking Survey 2014



**Table 6: Profile for Buloke LGA (n=49) (NC CMA Social Benchmarking Survey, 2014)**

Attribute	
<b>Most common enterprises</b>	Broadacre cropping – 100% Sheep - 88%, Beef cattle – 27%
<b>Top 3 district issues</b>	Weed resistance to herbicides – 94% Absence of important services – 79% Long-term negative impact of absentee ownership - 69%
<b>Top 3 values attached to property</b>	Sense of accomplishment from producing food and fibre for others - 89% Sense of accomplishment from building a viable business - 87% Productive value of my soils - 87%
<b>Human activities are influencing changes in climate</b>	50% Agreed
<b>Landholders should have the right to harvest water that falls on their property even if that action impacts on others</b>	51% Agreed
<b>Most commonly adopted CRP</b>	Planted trees and shrubs – 89% Prepared a nutrient budget – 61% Used controlled or rotational grazing – 35% Fenced waterways – 17%
<b>Long-term plans for property</b>	Ownership stay in family – 78% I will live on property as long as possible after I turn 65 years of age – 53% Additional land will be purchased – 40%
<b>Median age</b>	59 years
<b>Farmer by occupation</b>	Full-time 78%, Part-time 20%, Non-farmer 2%
<b>Length of property ownership</b>	40 years
<b>Multiple property ownership in region</b>	33%
<b>Absentee owner</b>	20%
<b>Property size</b>	1,045 ha
<b>Have/ developing property management plan</b>	30%
<b>Completed a short course related to property management</b>	33%
<b>Predicted change in property ownership/ management next 10 years</b>	14%
<b>Landcare participation</b>	38%
<b>Commodity group member</b>	15%
<b>Soil health group member</b>	15%

**Table 7: Profile for Macedon Ranges LGA (n=33) (NC CMA Social Benchmarking Survey, 2014)**

Attribute	
<b>Most common enterprises</b>	Beef cattle – 58% Sheep - 33%, Cropping – 9%
<b>Top 3 district issues</b>	Impact of pest plants and animals on native plants and animals – 71% Loss of native plants and animals in landscape – 65% Long-term negative impact of absentee ownership - 52%
<b>Top 3 values attached to property</b>	An attractive place to live - 90% Native vegetation provides habitat for birds and animals - 87% Ability to pass on healthier environment to future generations - 74%
<b>Human activities are influencing changes in climate</b>	73% Agreed
<b>Landholders should have the right to harvest water that falls on their property even if that action impacts on others</b>	53% Agreed
<b>Most commonly adopted CRP</b>	Planted trees and shrubs – 63% Used controlled or rotational grazing – 63% Fenced waterways – 41% Prepared a nutrient budget – 15%
<b>Long-term plans for property</b>	I will live on property as long as possible after I turn 65 years of age – 84% Ownership stay in family – 81% The property will be sold – 10%
<b>Median age</b>	63 years
<b>Farmer by occupation</b>	Full-time 18%, Part-time 52%, Non-farmer 30%
<b>Length of property ownership</b>	22 years
<b>Multiple property ownership in region</b>	26%
<b>Absentee owner</b>	82%
<b>Property size</b>	23 ha
<b>Have/ developing property management plan</b>	33%
<b>Completed a short course related to property management</b>	22%
<b>Predicted change in property ownership/ management next 10 years</b>	14%
<b>Landcare participation</b>	37%
<b>Commodity group member</b>	7%
<b>Soil health group member</b>	Nil

## CONCLUSIONS AND RECOMMENDATIONS

This social research set out to identify a way forward for the VSTWP as they respond to the challenge of engaging “difficult to engage” landowners in the control of Serrated Tussock. The approach employed was to use a literature review to identify the key elements of a practical framework and then draw upon the knowledge and experience of the VSTWP to identify actions that can be taken.

The essence of this “engagement framework” is a five-cohort landowner typology. This typology enables the VSTWP to develop effective appeals/ messages and deliver them through media, activities and platforms that are relevant to each cohort given their particular attributes (e.g. values, beliefs, norms, attitudes, connections/ networks etc). The VSTWP is encouraged to use this framework to guide future engagement with landowners. Tables 6a to 6e provide a useful summary of that framework and practical examples of how that information can inform engagement.

Engagement can be through any of the five broad types of policy instruments: (prescription, penalty, persuasion, payments and property rights). The VSTWP has access to four of these types of policy instrument but has typically relied upon persuasion and to some extent, compliance. The VSTWP should consider how each policy instruments might be employed. For example, the VSTWP could give additional consideration to the use of payments to support landowner control of Serrated Tussock. This approach would be consistent with contemporary NRM policy (i.e. applying public funds on private property where there is a clear public benefit). A source of funds would need to be identified. Philanthropic and other Non-Government Organisations are potential investors as are Governments. The investment proposition would seem to be around containing and eliminating a weed of national significance; or the protection of important environmental and cultural assets within the Core. There are potential funding sources which may find a proposal from VSTWP attractive, probably for a substantial budget (e.g. \$>1 million per year).

The VSTWP is fortunate to have widely accepted best-practice methods of controlling Serrated Tussock that are applicable in different contexts and acceptable to different landowner types. However, there are concerns about herbicide resistance in cropping systems. This issue is likely to affect farmers more than other landowners. This type of issue is best addressed by groups of farmers working with industry and researchers to identify and trial different management approaches and possibly products. The VSTWP is encouraged to identify potential partners (e.g. the Weeds Cooperative Research Centre) to support a “farmer-led” approach to addressing herbicide resistance.

Given the current mix of landowners and the expected ongoing influx of non-farmers in the Core and around the Containment line, it is possible that the use of herbicides (other than spot spraying) to control Serrated Tussock will be opposed by some landowners. The VSTWP

should consider how to respond to this potential threat to the application of an important control method.

The effectiveness of the VSTWP is to a large extent dependent on the capacity of VSTWP extension staff and other partners who engage landowners. Discussions with VSTWP extension staff, Landcare coordinators, Surf Coast Shire staff, Corangamite CMA staff, and leaders of a local Landcare group highlighted a range of issues they face, from those associated with the challenges of engaging a diverse set of landowners; managing burnout in front-line staff; and re-invigorating Landcare groups. The VSTWP is encouraged to work with partner organisations (e.g. Corangamite CMA) to identify ways to respond to these challenges.

The engagement framework based around the five-cohort landowner typology is a key element of an effective VSTWP response to the challenge of engaging “difficult to engage landowners. While the VSTWP will develop specific communication tools and processes for each type (and subtypes), VSTWP extension staff must also engage individual landowners. The existing staff are very capable and experienced and understand that “everyone is different”. That is, they must quickly assess the values, beliefs, attitudes and capacity of each landowner as well as their land use and management. Such an assessment is unlikely to be completed in one visit. Discussion with VSTWP extension staff indicate they keep some records of each property owner, but those data are typically limited to a few property-level details. We recommend that VSTWP staff establish a data base that allows them to record a wider set of landowner attributes. Those data will then provide valuable insights for staff engaging those landowners in future. Over time the data base can be interrogated to monitor the types of landowners engaged and for staff to reflect on the effectiveness of approaches to engaging landowners.

We have suggested that social research summarised in this report provides insights to guide VSTWP strategic thinking. For example, we have presented evidence that geography matters. That is, even within short distances across the Core and Containment line there are significant differences in the attributes of landowners. A first step should always be to reflect on the attributes of landowners in the area of operation and evaluate how those attributes should influence how the VSTWP approaches engagement with them.

We have also presented evidence of ongoing turnover in rural property ownership. We expect half of all rural property in Victoria will have a different landowner within a decade. This trend is something the VSTWP is aware of and is responding to. We encourage the VSTWP to continue to identify ways to engage new landowners. We also encourage the VSTWP to assess whether they really need to engage very “difficult to engage” landowners. There is always the option of waiting until a new person is managing that land.

As part of a strategic approach to engagement we present six questions the VSTWP should consider as they develop an engagement strategy:

1. Where will the VSTWP focus their engagement effort?
2. What is the objective of engagement in each location? For example, what is the desired level of Serrated Tussock control?
3. Which landowners should be engaged in each location to achieve the desired level of Serrated Tussock control? As part of thinking about this question, the following should be considered:
  - a. How important is each of the five landowner types?
  - b. What is the likelihood of each landowner type taking action to implement best-practice management given their attributes and any constraints they may face?
4. Which policy instruments are likely to be effective for each landowner type?
5. What appeals are likely to be effective for each landowner type?
6. What engagement tools and processes should be employed for each landowner type?

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## APPENDIX 1: VSTWP SOCIAL RESEARCH PARTICIPANTS

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