



Ashburton District Council - Water Investigation Project

Stockwater User Survey

April/May 2013



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Stockwater User Survey

Prepared By


Sri Hall
Principal Environmental Consultant

Opus International Consultants Ltd
Christchurch Environmental Office
20 Moorhouse Avenue
PO Box 1482, Christchurch Mail Centre,
Christchurch 8140
New Zealand

Reviewed By


Greg Birdling
Principal Environmental Engineer

Telephone: +64 3 363 5400
Facsimile: +64 3 365 7858

Approved for
Release By


Tony McKenna
Business Manager, Christchurch Environmental

Date: 10 July 2013
Reference: 3-CW923.M1
Status: Final

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Executive Summary

Ashburton District Council has committed to undertake a number of key tasks to achieve an objective of reducing stockwater abstractions from the Ashburton River and making any unrequired water available for environmental or productive benefit. As part of this commitment, a survey was undertaken to determine current uses of the stockwater network and identify the location of stockwater need. It also furthers the work initiated in the *Water Investigation Project* (Opus, 2012).

The survey was sent to 2,030 stockwater customers in April 2013 and had a 75% response rate, providing a high level of confidence that the results are representative of the entire survey group. This report presents the results of the survey with respect to the stockwater network usage, alternative sources of water, location of stockwater need and future opportunities for accessing alternative sources.

Of all the respondents, 58% stated that the stockwater supply was essential for their farming operation; with the predominant use being for stock drinking water (96%) followed by domestic uses (19%). The water is also used for potable supply for 7% of customers. Stockwater, domestic uses and potable supply are considered by Ashburton District Council to be the core uses of the network.

Half of the respondents who use water for core uses have access to other sources of water on their property and one third of these users consider their other source of water sufficiently reliable to meet their current and future stockwater needs. One-fifth of core users were considering sourcing water from predominantly groundwater or an irrigation scheme within the next five years.

The properties that indicated an essential need for stockwater were mapped to identify where stockwater is presently essential and to identify future opportunities to rationalise the network.

The discussion focusses on potential alternative opportunities for the Council to supply stockwater. This includes combining services or sharing trenches with a number proposed and existing irrigation schemes across the District; accessing groundwater of suitable quality; alternative surface water options or, at the very least, reducing current abstractions. The viability of each of these opportunities varies across the serviced area.

To progress the rationalisation of the stockwater network, this report identifies several future tasks:

- An ecological survey of the races to identify areas of high ecological value
- Open dialogue with irrigation schemes throughout the District to see what potential synergies exist
- Explore options for alternative sources of water, particularly for those at distal parts of the network to reduce 'water required to convey water'

-
- Explore options to reduce abstractions from the North and South Branches of the Ashburton River as a priority followed by consideration of options for each of the five schemes within the network.

1 Introduction

In November 2012, Ashburton District Council (the Council) undertook a high level/strategic investigation of the Ashburton stockwater network to assist the work of the Ashburton Zone Committee, of which it is co-convenor. The investigation focussed on whether any water could be made available through water efficiency improvements and how that 'unrequired' water could be used elsewhere within the District to help achieve the objectives of the Ashburton Zone Implementation Programme (ZIP). The work of the Zone Committee provides the basis of the Ashburton sub-chapter of the proposed Land and Water Regional Plan, notified in August 2012. One of the objectives of the sub-chapter is the reduction in the abstraction of stockwater from the Ashburton River (Policy 13.4.1).

While the *Water Investigation Project* (Opus, 2012) did not consider the current need for stockwater, it identified that stock consume 4% of the water abstracted for the network and an additional 5% is used for domestic purposes.

Following the completion of this initial investigation, the Council identified and committed to undertake a number of tasks as part of a work programme towards delivery of a more efficient stockwater network. A survey of the stockwater network users to determine the requirements for stock and domestic users was identified as a key task to be delivered in 2013. This survey would further help define the project tasks for the Council and a programme for delivering improvements to the network.

A survey of network users was sent to over 2,000 stockwater customers in April 2013 with substantial follow up throughout April and May, resulting in an excellent response rate of 75%.

The purpose of this report is to detail the findings of the survey which was designed to determine current uses and future need for the stockwater network.

2 Methodology

2.1 Purpose of the Survey

The purpose of the survey as identified by the Council was to collate information that would assist in preparing a detailed project programme for the future of the network and progressing the overall *Water Investigation Project* (Opus, 2012). This body of work includes identifying the extent of the stockwater network required to service stockwater customers, and to support continued discussions with irrigation companies and Rangitata Diversion Race Management Limited (RDRML) to explore opportunities to combine stockwater with piped irrigation networks.

2.2 The Survey

The survey was based on previous stockwater network surveys and designed to capture the information sought by the Council, including:

- Identification of core water uses
- The number of customers requiring access to stockwater
- How much water is needed to supply core use
- What alternatives, if any, are presently available to each user.

The survey was reviewed by key Council staff and sent to all Councillors for comment prior to distribution to stockwater customers.

Surveys were sent to 2,030 stockwater customers owned by approximately 1,800 landowners in April 2013. The survey is attached in Appendix A.

The survey was also made available online via Survey Monkey, an online survey software and questionnaire tool. Due to the limitations of the online survey tool, the survey was arranged slightly differently to the hard copy forms. It is not considered that this would have a significant impact on results as only a small number of surveys were received/completed online.

2.3 Responses

A total of 1,530 responses were received, which is a 75% response rate. The survey information was entered into Survey Monkey, an online survey software and questionnaire tool.

To support the accuracy of the survey and the high response rate, follow up phone calls were made by the Council direct to property owners in late April and throughout May. In addition, property owners who had submitted surveys that identified their supply of stockwater was essential for their farming operation but whom had a substantially

incomplete survey, were encouraged to complete it via a follow up phone call from the Council.

The only substantially incomplete surveys that were entered into Survey Monkey were those who had identified that they did not consider the supply of water essential to their farming operation or did not use the stockwater race or supported the closure of the races.

3 Results

3.1 Assumptions

In analysing the results of the survey, it has been assumed that the results are representative of all users. Where percentages are reported, they have been rounded to whole percentages. It is also noted that there were some inconsistencies in the responses which are difficult to account for. As a simple example, where there was a yes/no question, some respondents ticked both possible answers.

3.2 Stockwater Network Usage

3.2.1 All respondents (1530)

Of the 1,530 responses returned, 58% (888) of respondents stated that the supply of stockwater was essential for their farming operation. Stockwater races were located on or adjacent to the properties of 85% (1,308) of all properties.

The survey sought to identify the various uses made of the stockwater supply. Respondents were asked to identify all uses and to specify any others not listed. Approximately 70% (1,066) of all customers use the water races for stock drinking water, 11% (173) use the water for domestic uses and 4% (65) use the service to supply potable water (Figure 1). Some 45% of all respondents stated that they did not know how much stockwater they required during peak periods. Stockwater is also used to provide water for amenity ponds for 8% (118) of the responses.

The results indicate that although some customers do not rely on the stockwater network or do not consider it essential for their farming operation, they still use the water that passes by or through their properties.

Other uses identified, and not shown in Figure 1 include (and in no particular order):

- No use
- Irrigation, including crops, trees, plants and gardens
- As a conduit for flood/stormwater in times of high rainfall
- Providing biodiversity e.g., bees, frogs, fish
- Fire fighting
- Emergency water supply when wells go dry or when power is lost, for example, during heavy snowfall events
- Cow shed water
- Vehicle washdown
- Passive enjoyment.

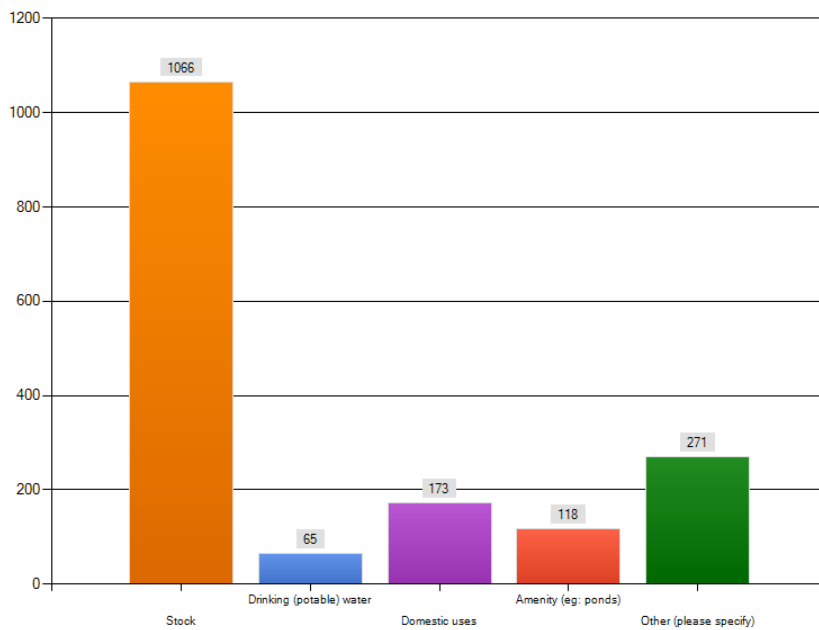


Figure 1: Uses of the stockwater network for all respondents

Land uses for all respondents are shown in Figure 2. Respondents were asked to identify all land uses that apply. Predominant uses are sheep, cropping (predominantly as a mixed farm operation), dairy grazing, beef and dairy.

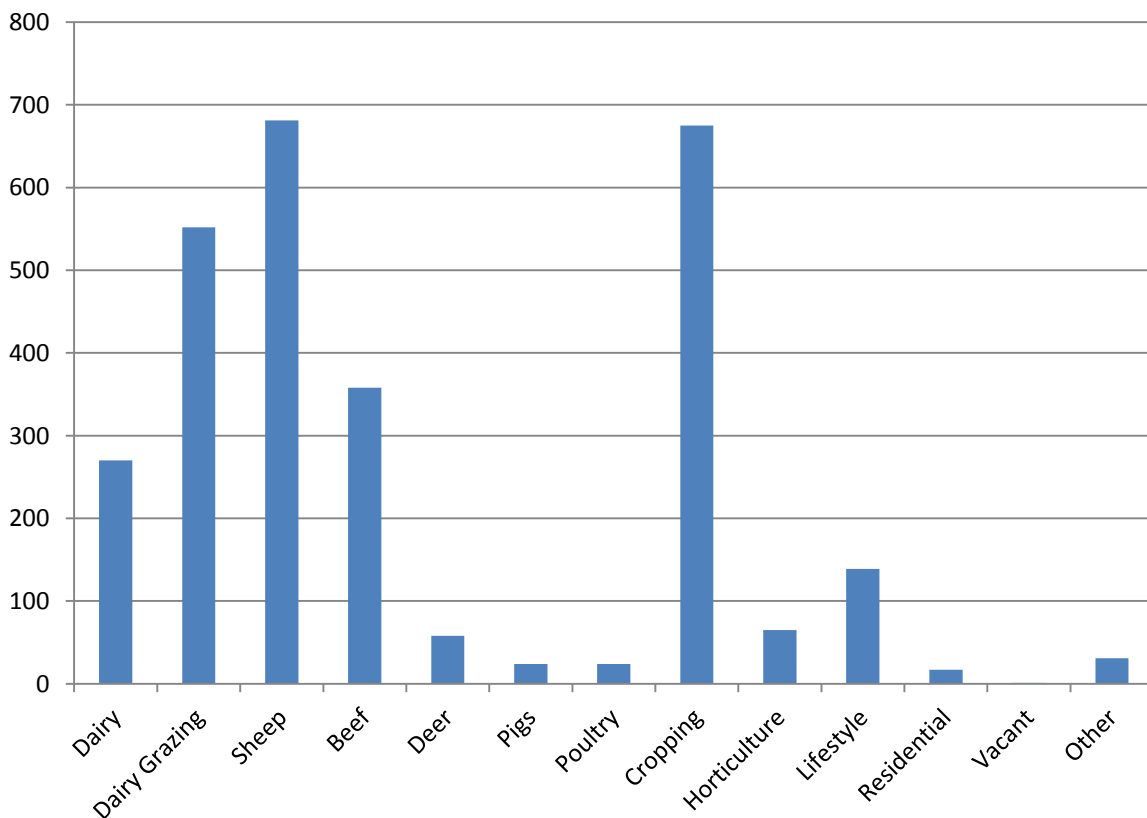


Figure 2: Land use for all respondents

3.2.2 Core Users (854)

Where the supply of stockwater was identified as essential for the farming operation (888 respondents), the uses of that supply are shown in Figure 3. The predominant use of the water supply for those who rely on the network is stock drinking water at 96% (850). Approximately 19% (165) of users also rely on the stockwater network for domestic purposes and 7% (63) for drinking water. Other uses are the same as for those identified for all respondents.

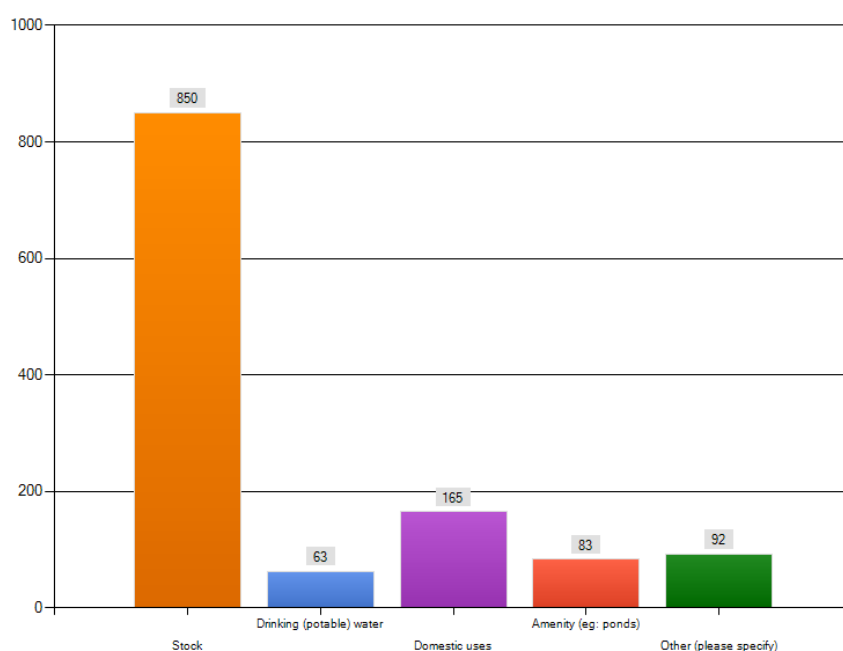


Figure 3: Uses of the stockwater network for core users

Of the 888 respondents who identified that the supply of stockwater was essential for their farming operation, 854 specifically stated that they use the water for stock drinking water, potable water or for other domestic uses including, for example, toilet flushing and household cleaning. As these three uses are considered by the Council to be the core uses of the scheme, the results for core users herein only relate to these 854 respondents.

The majority (96%, 817) of core users who consider the supply of stockwater is essential for their farming operation have a stockwater race located on or adjacent to their property. Half (52%, 443) of the core users did not know how much stockwater they required during peak periods.

Land uses for core users who identified that the supply of stockwater was essential for their farming operation are shown in Figure 4. Respondents were asked to identify all land uses that apply. Predominant uses are sheep, cropping (predominantly as a mixed farm operation), dairy grazing and beef.

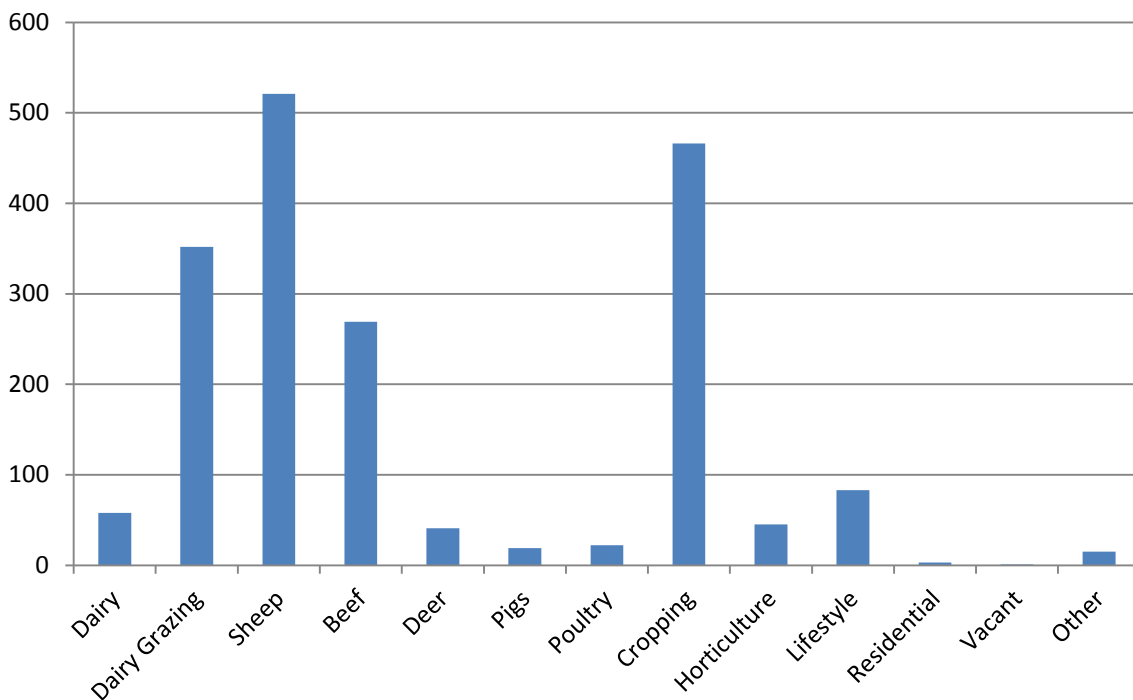


Figure 4: Land use for core users

3.3 Alternative Sources of Water

Respondents were asked to consider reliability of supply of the stockwater network and current access to alternative sources of water.

3.3.1 All respondents (1530)

Approximately half of all respondents (54%, 825) considered that the Council stockwater network provides a reliable supply of water.

Respondents were asked to identify access to sources of water on their property. The majority (87%, 1,335) of customers indicated that they had access to sources other than the stockwater network. Of those that had alternative access, at least 881 (58%) had access to groundwater on their property. These numbers do not include those who ticked 'other' but specified for example, bore water.

The sources of water that properties have access to are shown in Figure 5. Respondents selected all alternatives that were available for their properties.

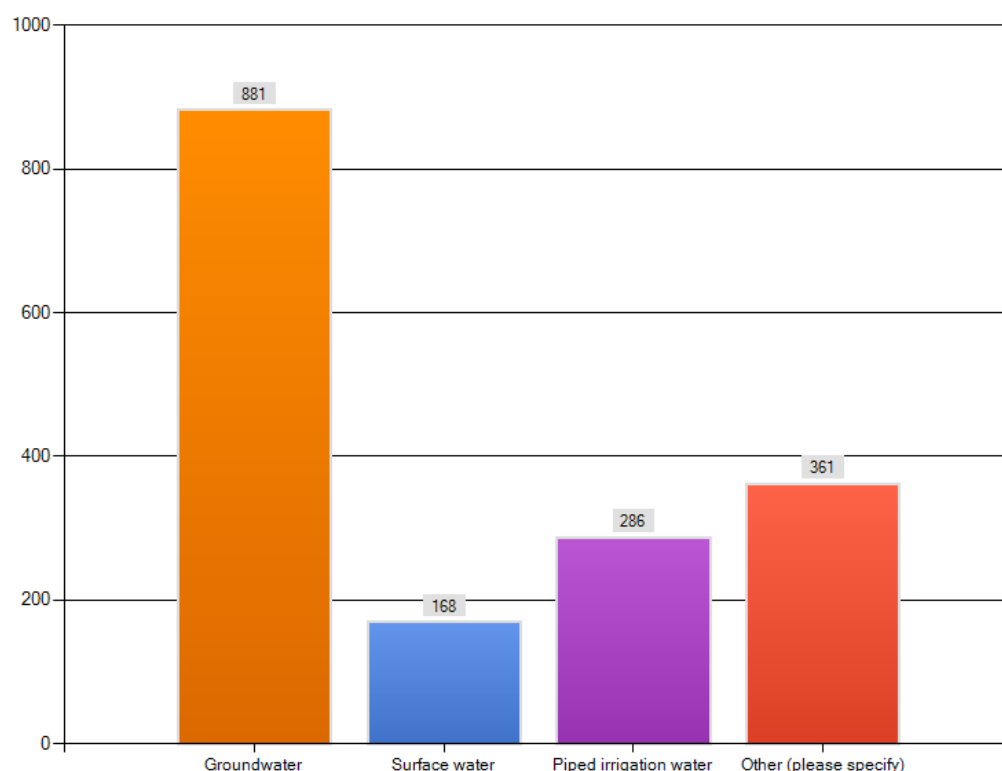


Figure 5: Alternative access to water for all respondents

Approximately half (49%, 757) of all respondents stated that they have had to obtain stockwater from an alternative source when water has not been available from the network. Approximately 28% (423) stated that they could not obtain stockwater from any other source on their property.

For those that could obtain stockwater from an alternative source (77%, 1,178), two thirds (65%, 762) said the other source would be sufficient to reliably meet their current and future stockwater needs. The following alternatives for stockwater supply were identified:

Table 6: Alternative sources of water

Alternative Source	Number of Respondents
Groundwater	732
Surface water	61
Irrigation scheme	269
Other	116

Other sources that could be used for stockwater include:

- Water schemes and town supply
- Rain water

-
- House supply
 - Storage pond
 - Neighbours
 - Water brought in by tanker.

The survey asked respondents to consider irrigation schemes as a potential alternative water source. An irrigation race or piped network is located within one kilometre of 44% (672) of all respondents. Only 18% (277) were currently a member or shareholder of a piped irrigation scheme and 17% (264) were currently serviced by an open race scheme that would likely be piped within the next five to ten years. Of these, the majority (87%, 229) were likely to join the scheme.

Approximately 30% (453) of all customers have no piped infrastructure and 57% (872) have no irrigation system on the property.

3.3.2 Core Users (854)

For those whom the supply of water is essential and who use it for stock drinking water, potable supply and domestic uses, 78% (668) of respondents considered that the Council stockwater network provides a reliable supply of water.

Respondents were asked to identify access to sources of water on their property. At least 67% (574) of respondents indicated that they had access to sources other than the stockwater network. Of those that had alternative access, at least 377 (66%) had access to groundwater on their property. It is noted that these numbers do not include those who ticked 'other' but specified for example, bore water.

The sources of water that properties have access to are shown in Figure 7. Respondents selected all alternatives that were available for their properties.

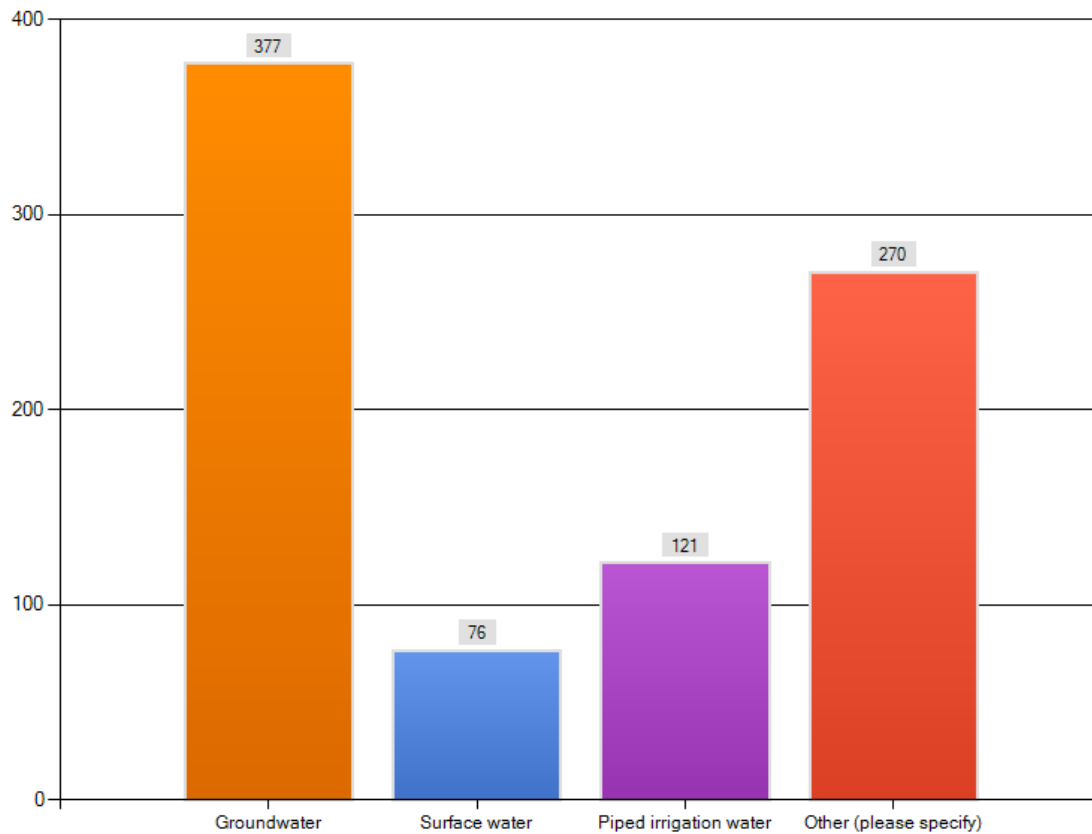


Figure 7: Alternative access to water for core users

'Other' access to water as stated by respondents include:

- No alternative
- Rainwater off the house roof
- Irrigation and domestic schemes, and town supply:
 - RDRML
 - Lyndhurst Reserve
 - Winchmore
 - Fairton
 - Methven Springfield
 - Dromore
 - Highbank
 - Acton
 - Mt Hutt
 - Barrhill Chertsey
 - Spaxton
 - Mayfield
 - Valetta
 - Chertsey Village.

It is notable that 140 (16%) of the 854 respondents did not answer this question. It seems likely that these users did not have access to alternative sources of water.

Approximately half (52%, 447) of the core users stated that they have had to obtain stockwater from an alternative source when water has not been available from the

network and 45% (382) of core users stated that they could not obtain stockwater from any other source on their property.

For those that could obtain stockwater from an alternative source (60%, 516), half (53%, 276) said the other source would be sufficient to reliably meet their current and future stockwater needs. Other alternatives are the same as for those identified for all respondents. The following alternatives for stockwater supply were identified:

Table 8: Alternative sources of water

Alternative Source	Number of Respondents
Groundwater	289
Surface water	22
Irrigation scheme	127
Other	78

The survey asked respondents to consider irrigation schemes as a potential alternative water source. An irrigation race or piped network is located within one kilometre of 42% (357) of core users. Only 16% (137) were currently a member or shareholder of a piped irrigation scheme and 12% (105) were currently serviced by an open race scheme that would likely be piped within the next five to ten years. Of these, the majority (82%, 86) were likely to join the scheme.

Of the 854 respondents who consider the supply of stockwater essential to their farming operation and use the water for stockwater, potable supply and domestic uses, 42% (360) have no piped infrastructure and 53% (450) have no irrigation system on the property.

3.4 Location of Stockwater Need

Support for closure of the open race network can be considered in terms of both the total respondents and those that rely on the supply for core uses (refer Table 9). While 42% (642) across all respondents support race closure, only 18% (157) of those who rely on the water for stock drinking water and domestic uses support their closure.

Table 9: Support for race closure

Support Closure	All Respondents		Core Users*	
	No.	%	No.	%
Yes	642	42	157	18
No	745	49	671	79
No answer	143	9	26	3
Total Responses	1530	100	854	100

*Core users who have identified the supply of stockwater is essential for their farming operation.

The results of those who rely on the network have been mapped to identify where the stockwater is presently essential. Figure 10 shows the location of core users who identified that the supply of stockwater was essential to their farming operation and do not support closure of the races. The map identifies the need for core uses with respect to the existing open race stockwater network. It also identifies those users who stated that the supply of stockwater was essential but have a reliable alternative source.

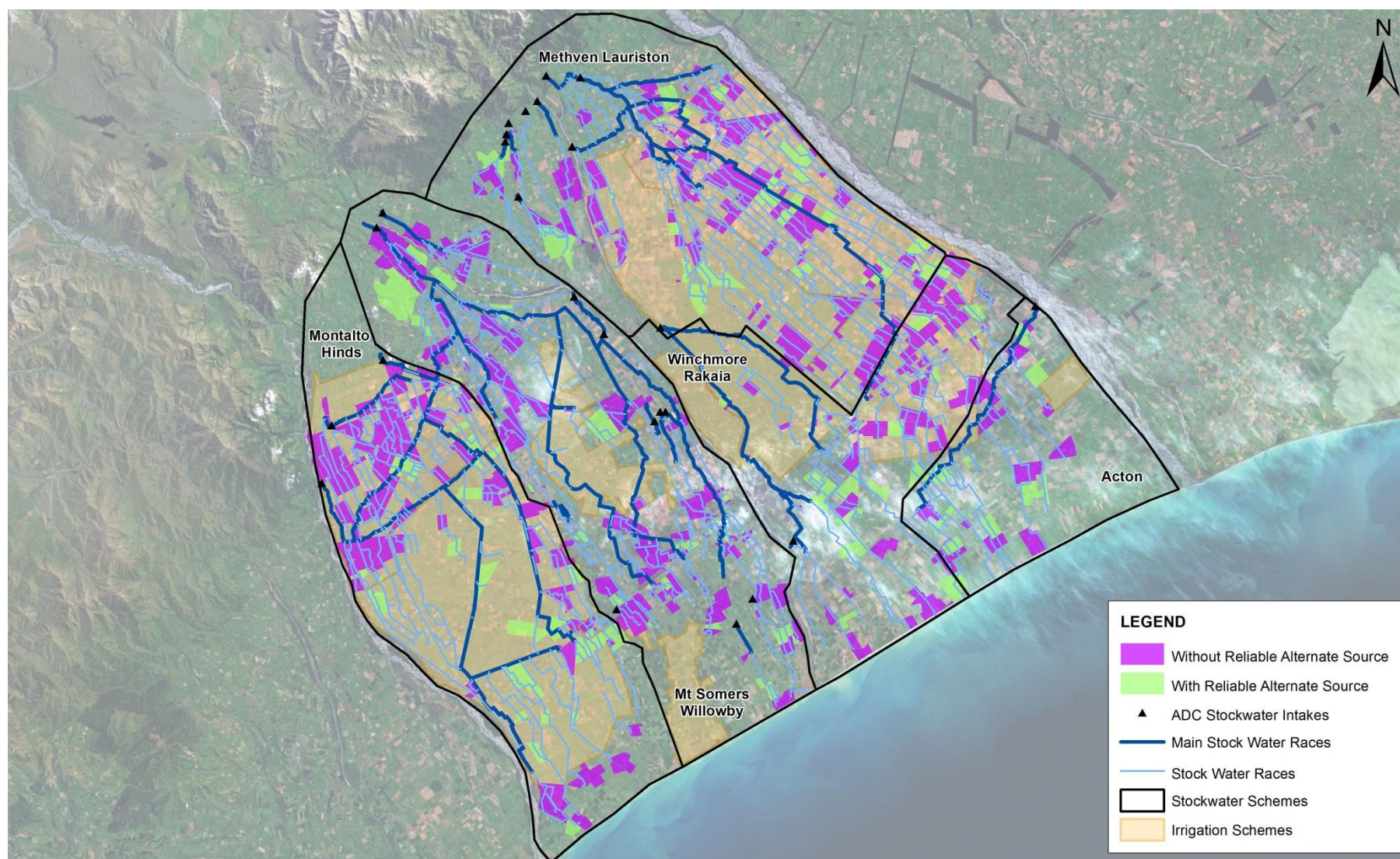


Figure 10: Location of stockwater need

3.5 Future Opportunities

Respondents were asked to consider their future farming operation. Responses are similar when comparing core users to those of all the respondents.

3.5.1 All Respondents (1530)

Of all the respondents, 20% (299) were considering sourcing either alternative or additional water within the next five years from predominantly groundwater or an irrigation scheme and only 5% (69) intend to change their farming activity in the next five years.

3.5.2 Core Users (854)

For core users who identified that the supply of stockwater was essential for their farming operation, 19% (159) were considering sourcing either alternative or additional water within the next five years from predominantly groundwater or an irrigation scheme and only 5% (42) intend to change their farming activity in the next five years.

4 Discussion

The map showing where stockwater is essential (Figure 10) shows that the need is spread across the entire district. This makes the consideration of alternative supplies more challenging. However, there are some clusters of users particularly around abstraction points in the foothills and around the State Highway One between Tinwald and Hinds townships. It is also clear that for some races, the only users who rely on the network without a reliable alternative supply of water are those at the very ends of the scheme. There is certainly opportunity here for significant water savings.

While decisions can't be made within the context of this report and certainly not without further investigation and discussions at individual farm level, consideration can be given to likely alternatives to supply stockwater to support a number of potential stockwater schemes at a scale smaller than that currently serviced.

4.1 Irrigation Schemes

Within the stockwater network area, there are several existing irrigation schemes:

- Acton Farmers Irrigation Co-operative – utilises stockwater races to deliver irrigation water.
- Barrhill Chertsey Irrigation Scheme – a piped network still under development.
- Ashburton Lyndhurst Irrigation Limited – a partly piped network currently upgrading the remainder of the network from races to a piped scheme.
- Greenstreet – open channel races.
- Eiffelton Community Irrigation Scheme – open channel races.
- Mayfield Hinds Irrigation Limited – open channel races but considering an upgrade to a piped network.
- Valetta Irrigation Limited – an existing open channel network currently being piped.

Some of the existing irrigation schemes are proposed to be piped in the near future. Given the expansive areas that these schemes cover, this presents a real opportunity for dialogue with the irrigation schemes to explore the feasibility of either combining services or sharing trenches and other facilities.

Stockwater could potentially be provided jointly with irrigation water or as a separate reticulated supply alongside a piped irrigation network. Either option may only add a relatively minor cost to the cost of an irrigation scheme. However, it is noted that it may not be feasible to combine a continual supply of small quantities of stockwater with significant volumes of irrigation water delivered only over the irrigation season and there may be problems from silt in the small pipes and fittings required for stockwater supply.

As many of the irrigation schemes throughout the Ashburton District are currently considering moving from open races to a piped network, it would be timely to pursue these opportunities.

4.2 Groundwater

Groundwater is a feasible option in areas where it is more accessible. Although the majority of the stockwater network area, with the exception of the Mayfield-Hinds area, is in a red zone for groundwater abstraction, the proposed Land and Water Regional Plan (2012) supports the abstraction of groundwater where the equivalent of surface water abstraction is surrendered.

Seaward of the State Highway One, reliable groundwater can be typically obtained at depths of 20-50m. Sourcing groundwater in these areas could be an affordable option to delivering stockwater, but may be less so in areas landward of State Highway One which usually require bore depths of 60-120m to obtain a good supply of water. There also tends to be less certainty of obtaining reliable yields towards the foothills.

Consideration should be given to ensuring the supply of water is of suitable quality for stock drinking. Supplies with high mineral concentrations (e.g. iron, manganese) may be less palatable to stock and cause other issues with infrastructure (e.g. scaling). Some areas also have an increasing trend of nitrate levels in the groundwater.

There may also be a perception that groundwater is automatically suitable for human consumption given its generally clear appearance, when this may not be the case. There is a risk that piped stockwater schemes will be more widely used for potable water supply than the existing open races and Council may need to educate users about the risks of this.

4.3 Surface Water

Significant savings can be achieved if a piped scheme delivered water to a cluster of users rather than an open race network to intermittent users along the length of the scheme.

As the Ashburton River is an over-allocated catchment, priority should be given to sourcing alternative supplies for existing abstractions from the River or at the very least, reducing current abstractions through the delivery of water through a piped network. Existing abstractions from the Ashburton River and its catchment are:

Table 11: Consented abstraction rates from the Ashburton River catchment

Intake	Source	Consented Maximum Rate of Abstraction (L/s)
Methven Auxiliary	North Ashburton River	1300
Brothers Intake	South Ashburton River	1955
Winchmore	Ashburton River Springs	790
Pudding Hill	Pudding Hill Stream	500
Bushside	Taylor's Stream	70
Durrans Terrace	Taylor's Stream	100
Goughs Crossing	Taylor's Stream	70
Washpen Creek	Washpen Creek	340
Langdons South	Langdons Creek	120
Stoney Creek	Stoney Creek	110

The need for stockwater is very scattered across the District, with some clusters apparent. Therefore, a consideration of specific alternative surface water options is challenging to determine at this stage, particularly without first considering the ability to deliver water through irrigation networks or from groundwater.

Surface water should be considered a source of supply in those areas where access to groundwater is unreliable. Abstractions from around the foothills will likely provide a good source of good quality water.

5 Conclusions

The excellent rate of response to the survey provides a high level of confidence that the results are representative of the entire survey group. The supply of stockwater was considered essential for 58% of all respondents. Where these respondents used the water for core uses (854 respondents), 78% stated that the supply of stockwater was reliable and 53% had access to a reliable alternative source of water, predominantly from groundwater, but also access to water supplied by irrigation schemes. For these core users, 42% of respondents had no pipe and trough infrastructure.

Mapping the stockwater needs helps to identify future opportunities to rationalise the existing open race network. This could be achieved by a number of mechanisms, but predominantly by piped networks supplied from groundwater, or supplying stockwater through irrigation schemes. This is particularly pertinent given that an irrigation race or piped irrigation network is located within 1km of 42% of core users who currently have no alternative access to a reliable supply of water.

Further detailed investigation will be required at individual farm level to confirm the requirements for stockwater and options for providing alternative supplies.

However, the next consideration should be given to determine those parts of the network that provide high biodiversity values and which should be retained in their present form. Once these areas are identified, then the focus can be turned towards reducing abstraction and finding alternative supplies of stockwater for the remainder of the network that could support potential stockwater schemes on a small scale. However, this should not be at the expense of maximising the present opportunity to explore the option of providing stockwater alongside irrigation water given the current climate towards piping existing open race schemes.

It is recommended that the identified need for stockwater sourced from the Ashburton River and its catchment is investigated as a priority.

As the *Water Investigation Project* (Opus, 2012) continues to be refined, it is likely that the need for stockwater will continue to decrease as it has for the last decade. It will be imperative that decisions are made on the latest available information.

6 Recommendations

This survey has led to the identification of several 'next steps' that should be considered to further the *Water Investigation Project* (Opus, 2012) and achieve the environmental objective of reducing abstractions from the Ashburton River.

1. Ecological Survey

An ecological survey will identify areas of high ecological value or areas of valuable habitat, for example, the Canterbury Mudfish, an endangered native species. The determination of these areas and overlaying of this information with the results of this survey will assist in identifying parts of the network that may be best maintained in their present form. This could also provide an opportunity to further enhance these values.

2. Irrigation Schemes

Dialogue with irrigation schemes should continue as a priority given that many of the schemes in the Ashburton Area are currently converting their existing open race systems into piped networks or are presently considering their options to do so. There could be missed opportunities to share service corridors, construction costs and/or pipelines if this does not take place.

3. End of Race

The map of stockwater need shows that there are many races where the identified need is at the most distal parts of the network from the intakes. Although there are some users along these races who rely on the network, some of them have identified that they have access to a reliable alternative source of water. The exceptions tend to be those at the very ends of the races and the network, particularly along the coast. In these areas, groundwater is usually more accessible. Given the long distances that the water is conveyed, there could be significant gains in water savings if those at the ends of the races were able to source an alternative supply. These alternatives should be explored.

4. Ashburton River

The abstractions on the North and South Branch of the Rakaia River are subject to the largest abstraction rates across the entire stockwater network. As the proposed Land and Water Regional Plan (2012) seeks reductions in abstractions from the Ashburton River, the abstractions in the foothills of this catchment that supply the network should be investigated as a priority.

This work could then be followed by consideration of options for each of the five schemes within the network. Such options may include supplying groundwater through piped network(s) to service clusters of properties that have no present alternative. The costs and benefits of such works would need to be investigated along with the potential impact on rates and charges.

References

Environment Canterbury, 2012: *Proposed Canterbury Land and Water Regional Plan*

Irrigation New Zealand, n.d.: Irrigation Schemes, retrieved from:

<http://www.irrigationschemes.co.nz/>

Opus 2012: *Ashburton District Council Water Investigation Project*, report prepared for Ashburton District Council by Sri Hall and Jack McConchie, Opus International Consultants Ltd, November 2012, Christchurch

Appendix A - Survey

Stockwater Race Survey

«nameaddr1»
«nameaddr2»
«nameaddr3»
«nameaddr4»
«nameaddr5»

Property location: «house_no» «street»
Property number: «property_no»

IMPORTANT – Please take a few minutes to complete this survey

Ashburton District Council is looking at options to improve levels of service and the efficiency of the stockwater network. As a user of the network we would appreciate you taking the time to complete this survey and returning it to Council using the freepost envelope supplied by Friday 26 April 2013. Alternatively, you can complete the survey online at the following website:

www.surveymonkey.com/s/stockwater

Section 1: Stockwater

1. Is the supply of stockwater essential for your farming operation?

- ☐ Yes
- ☐ No

2. Is a stockwater race located on or adjacent to your property?

- ☐ Yes, on our property
- ☐ Yes, adjacent to our property
- ☐ No

3. What do you use the stockwater for (tick all that apply):

- ☐ Stock
- ☐ Drinking (potable) water
- ☐ Domestic uses
- ☐ Amenity (eg ponds)
- ☐ Other, please specify: _____

4. Do you believe that the stockwater race network provides a reliable supply of water for your needs?

- ☐ Yes
- ☐ No

5. What other sources of water do you currently have access to on your property?

- ☐ Groundwater
- ☐ Surface water
- ☐ Piped irrigation water
- ☐ Other (please specify): _____

6. Have you ever had to obtain stockwater from an alternative supply when water has not been available from the stockwater network?

- ☐ Yes, from groundwater
- ☐ Yes, from surface water
- ☐ Yes, an irrigation scheme
- ☐ Yes, from other (please specify): _____
- ☐ No

7. What % of this property is currently serviced by a pipe and trough system?

- ☐ None
- ☐ 0-19%
- ☐ 20-39%
- ☐ 40-59%
- ☐ 60-79%
- ☐ 80-100%

8. Could you obtain stockwater from other sources on your property if required? (eg onsite bore or irrigation scheme?)

- ☐ Yes, from groundwater
- ☐ Yes, from surface water
- ☐ Yes, an irrigation scheme
- ☐ Yes, from other (please specify): _____
- ☐ No

8a. If yes, would the other source of water be sufficient to reliably meet your current and future stockwater needs?

- ☐ Yes
- ☐ No

9. Are you considering a move to an alternative or additional source of water to supply your property within the next five years?

- ☐ Yes
- ☐ No

9a. If yes, what alternative sources of water will you be considering?

- ☐ Ground water
- ☐ Surface water (e.g. river, stream)
- ☐ Irrigation scheme
- ☐ Other _____

10. Would you support the closure of stockwater races on this property?

- ☐ Yes
- ☐ No

Section 2: Farming Activity

11. Please describe your current farming activity/activities (tick all that apply):

- ☐ Dairy
- ☐ Dairy grazing
- ☐ Sheep
- ☐ Beef
- ☐ Deer
- ☐ Pigs
- ☐ Poultry
- ☐ Cropping
- ☐ Horticulture
- ☐ Lifestyle
- ☐ Residential
- ☐ Other, please specify _____

12. For each current farming activity, please provide the following information:

Farming Activity	Land area (ha)	Stock numbers (approx)
Total land area (ha)		

13. If your farming activity/activities have changed over the last five years, what was it previously? (tick all that apply)

- | | |
|--|--|
| <input type="checkbox"/> No change | <input type="checkbox"/> Pigs |
| <input type="checkbox"/> Dairy | <input type="checkbox"/> Poultry |
| <input type="checkbox"/> Dairy grazing | <input type="checkbox"/> Cropping |
| <input type="checkbox"/> Sheep | <input type="checkbox"/> Horticulture |
| <input type="checkbox"/> Beef | <input type="checkbox"/> Lifestyle |
| <input type="checkbox"/> Deer | <input type="checkbox"/> Residential |
| | <input type="checkbox"/> Other, please specify _____ |

14. Do you intend to change your farming activity/activities in the next five years? (eg convert to dairy)

- ☐ Yes
☐ No
☐ Don't know

14a. If yes, please describe what your proposed farming operation could be:

Farming Activity	Land area (ha)	Stock numbers (approx)
Total land area (ha)		

15. Do you know approximately how much stockwater you require in total at peak times?

- ☐ Yes, _____ litres/day
☐ No

Description	Peak Daily Water Requirement (L)
Cattle (lactating)	70
Other cattle	45
Deer	5
Sheep	3
Sows	25
Other Pigs	11
Poultry	0.03

Section 3: Alternative water sources on your property

16. Is this property a member/shareholder of a piped irrigation scheme?

- ☐ Yes
☐ No

17. Are you currently serviced by an open race irrigation scheme that is likely to be piped within the next 5-10 years?

- ☐ Yes
☐ No
☐ Don't know

17a. If yes, are you likely to join this scheme?

- ☐ Yes
☐ No

18. Is an irrigation race or piped irrigation network located near (within 1 km) to this property?

- ☐ Yes
- ☐ No

19. Do you have an irrigation system on this property?

- ☐ Yes
- ☐ No

19a. If yes, is it from:

- ☐ Own source (eg onsite groundwater bore) please specify _____
- ☐ From an irrigation scheme

Section 4: Comments

20. If you have general comments in regards to the stockwater network please note them below:

This image shows a single page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page, leaving small margins at the top and bottom. There is no handwriting or other markings on the paper.

Thank you for taking the time to complete this survey

- ☐ I would like the information provided in this survey to be kept confidential to Council. Information collected will only be used for the planning and development of Council's stockwater systems and individual respondent's details will not be identified.

Please return by Friday 26 April 2013 in the envelope provided

Please provide the following information:

Phone:

Phone: (cell) _____

Fax: _____

Email:



Opus International Consultants Ltd
20 Moorhouse Avenue
PO Box 1482, Christchurch Mail Centre,
Christchurch 8140
New Zealand

t: +64 3 363 5400
f: +64 3 365 7858
w: www.opus.co.nz