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Non-natural Rural Wastes - Site Survey Data Analysis: Summary Report

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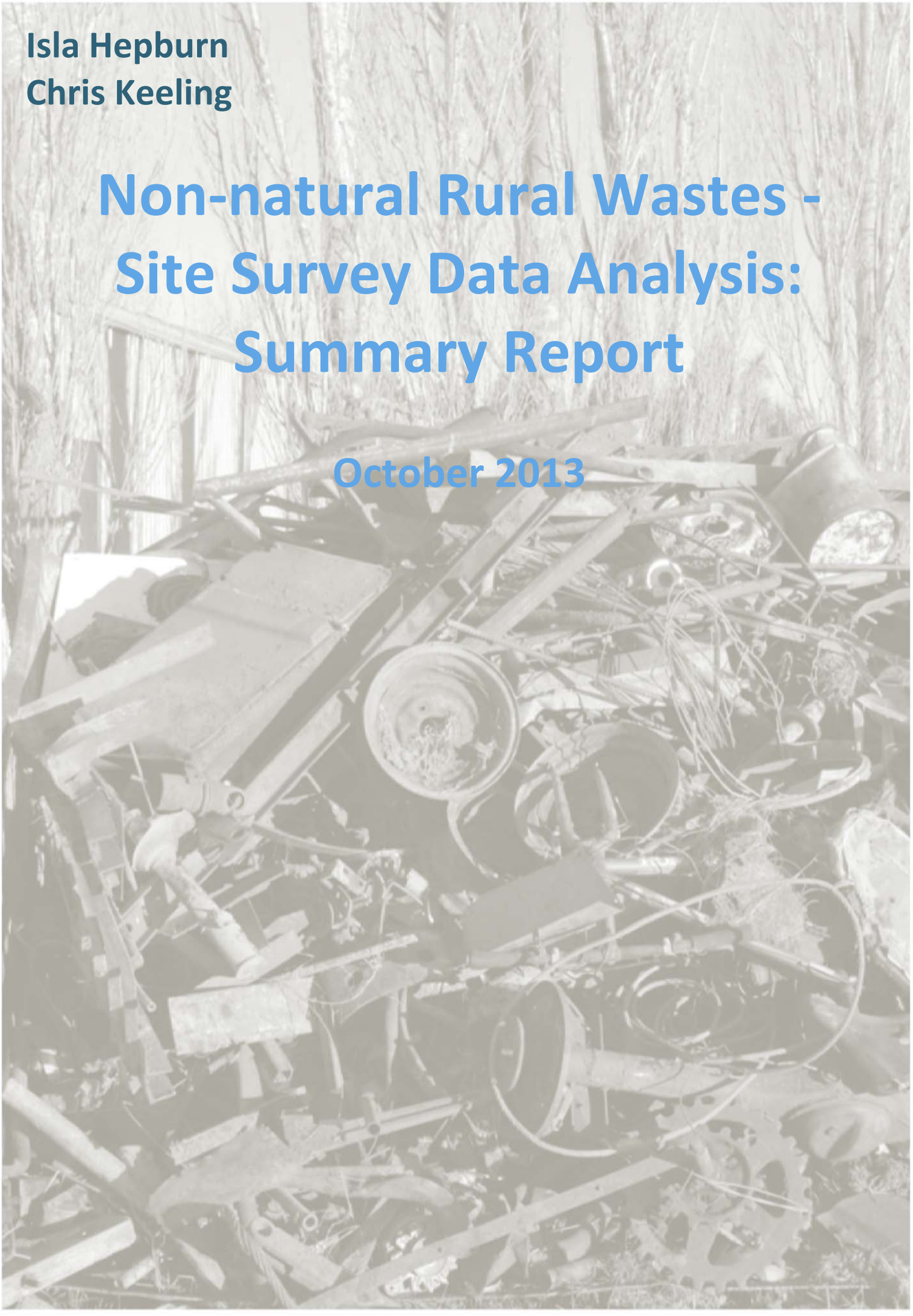

1 Introduction

What is the aim of this report?

This report summarises the findings of the farm waste survey that we completed in June 2013 (GHD, 2013). It gives an indication of the types and amounts of waste produced on farms in Canterbury, and how it is managed.

Why did we undertake this study?

Initial reports in 2012 (SKM, 2012; GHD, 2012) indicated that little was known about rural waste management in Canterbury. Our discussions with agricultural product stewardship scheme operators suggested that uptake of their services could be better and that waste was still being routinely burned or buried. We undertook the surveys to gather data and establish the scale of the issue.

What terms do we use in this report?

Non-natural rural waste is the term used for the inorganic waste that is produced by farms. It includes scrap metal, hazardous waste, construction and demolition waste, agricultural plastics, waste agrichemicals and their containers, feed and seed bags, animal health products, etc.

Organic waste is the term used for dead stock and offal waste.

Domestic waste is the term used for typical household waste, e.g. food scraps, plastic wrapping, lawn trimmings, paper, etc.

Product stewardship scheme is a manufacturer-supported service to collect and reuse or recycle a waste product. Agricultural product stewardship schemes in New Zealand include Plasback and Agrecovery.

Level of service is the term used for the availability and quality of a waste service.

2 Methodology

How did we undertake the surveys?

We engaged an environmental consultant to carry out a voluntary waste data survey around the region. We asked our consultant to visit farms and talk to farmers about the type and amounts of waste they produced in a year. We also asked how they managed their waste and what they thought of waste services in their district.

Surveys were carried out on 53 farms in eight of the ten districts in Canterbury, and over a cross-section of dairy, livestock (sheep, beef, pig and poultry), arable (cropping, horticultural and arable), viticulture and small holdings (lifestyle blocks and an organic farm).

A standardised questionnaire was used on each farm to record waste types, quantities, disposal practices and farmer opinions.

3 Results

What types of waste were found?

In total, over 50 different types of non-natural rural waste streams were observed during the study, such as twine, netting, bale wrap, agrichemicals, containers, used oil, timber, tyres, animal health products, feed bags, etc.

What amounts of waste were found?

The report estimated a total of 490 tonnes of non-natural rural waste is produced annually by the 53 farms surveyed, which means that approximately 9 tonnes of non-natural rural wastes are produced on average by each farm every year. Organic waste and domestic waste were also measured separately; approximately 740 tonnes of organic waste and almost 26 tonnes of domestic waste were generated by the 53 farms surveyed.

Of the surveyed farms, an average of just under 24 tonnes of total waste is produced annually per farm, including non-natural, organic and domestic waste.

Based on these averages, the study estimates that each year approximately 82,000 tonnes of non-natural rural waste, 123,500 tonnes of organic/animal waste and 4,300 tonnes of domestic wastes are produced across Canterbury each year. This means that over 209,000 tonnes of waste is produced in total each year, which roughly equates to the amount of waste sent to landfill by Christchurch City in 2012/13.

How did farmers manage the waste?

Of the participating farms, 92% of farmers used burning, burying in a farm pit or bulk storage (stockpiling) to manage some or all of their waste, confirming that traditional disposal practices are still widely used. Therefore, based on the amounts identified, approximately 192,000 tonnes of waste is potentially disposed of in these ways in Canterbury each year.

Figure 1 shows the main types of wastes observed during the study, and the estimated annual tonnages entering traditional disposal routes (burning, burying and bulk storing). These figures have been calculated using 92% of the average mass per farm and multiplied by the 8,826 farm holdings in Canterbury.

What did the farmers think of waste management in general?

The survey team asked a number of questions which were intended to understand the behaviours, attitudes and perceptions of the farmers. 77% of participants felt that the disposal of non-natural rural wastes represented a problem for Canterbury, although 73% of participants felt that they managed their wastes well. Over half of the respondents felt that there was room for improvement in the way they managed their wastes, but consistently felt it was not entirely their responsibility to improve things.

Most of the participants knew about product stewardship schemes, but the feedback on the schemes was mixed, particularly with those dealing with silage wrap and containers. One of the key messages

from the surveys was that farmers would like manufacturers to have more accountability for taking back their products.

There appeared to be generational differences between farmers in terms of awareness of the recycling schemes and willingness to pay for these.

Figure 1 Predicted waste quantities produced annually entering 3B routes in Canterbury

Plastic – 2,416 tonnes

Twine/Netting – 1,773 tonnes

Containers - 727 tonnes

Scrap metal - 6,335 tonnes

Hazardous substances (paints, solvents, aerosols, used oil & oil filters) – 7,399 tonnes

Animal welfare – 247 tonnes

Seed bags - 22,943 tonnes

Cardboard – 2,422 tonnes

Timber - 26,670 tonnes

Agrichemicals – 24 tonnes

What did the review of levels of service find?

In assessing the levels of service available in Canterbury, we found that most district councils only provide limited rural waste recovery options, with the onus on farms and agribusinesses to organise their own options for disposal.

There are no council-run domestic waste collections in rural areas, due to logistical difficulties, but there are a number of private waste contractors and product stewardship schemes operating throughout Canterbury, willing to provide a variety of services to rural communities at a cost. Seven out of ten district councils support product stewardship schemes, but only three councils actively promote the schemes and provide agrichemical/plastic container collection points at their resource recovery parks.

3.1 Photos

Photograph 1 – Old fence posts from a Dairy conversion (some will be reused and some will be burnt)

Photograph 2 – Waste deposited in a farm pit

Photograph 3 – Large-scale farm pit

Photograph 4 – Non-natural rural waste burning at a livestock farm

Photograph 5 – Bale wrap storage prior to recycling through a product stewardship scheme

Photograph 6 – Scrap metal pile

Photograph 7 – Agrichemical container storage prior to pick-up at an arable farm

4 Discussion

What do the data mean?

Large amounts of waste are generated on Canterbury farms every year. It is clear that there is an issue with the way it is being managed. This seems to be borne by less-than-desirable behaviour, driven by a lack of available waste minimisation and disposal options, due to logistical challenges.

Farmers think that councils need to provide more waste management services, but the commercial-scale waste amounts being generated on farms require commercial-scale solutions; few options currently exist. There is good awareness of product stewardship schemes within the rural sector but these schemes only service a small number of waste types. While uptake of these schemes is improving year-on-year, it could be better. Farmers would like to see more manufacturers take responsibility for their products at end-of-life.

Farmers clearly want to engage with councils and industry to help solve the problem. Collaboration between farmers, local and national government, and industry is the only meaningful way to provide effective, long-term solutions that work for everybody.

5 Conclusion

What can we conclude from the report?

The surveys show that, in Canterbury, large volumes of rural waste are being produced year-on-year and that most of it is being burnt, buried or bulk-stored.

The evidence indicates that these waste streams are being managed in a way that may be negatively affecting our land, water and air. There are also long-term implications to consider, with the possibility of legacy issues arising in the future.

Poor waste management appears to be driven by poor service provision and a lack of waste minimisation and disposal options. In order to improve the situation, both these factors need to be addressed.

6 Acknowledgements

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7 References

Prepared for Environment Canterbury by Sinclair Knight Merz (2012) Non Natural Rural Waste Scoping Study, Environment Canterbury Report Number R12/51
http://ecan.govt.nz/publications/Plans/report-non-natural-farm-waste-scoping-study.pdf

Prepared for Environment Canterbury by GHD (2012) Non Natural Rural Waste Regional Assessment and Guidance Note Development, Environment Canterbury Report Number R12/74
http://ecan.govt.nz/publications/Plans/CanterburyNonNaturalRuralWasteRegionalAssessment.pdf

Prepared for Environment Canterbury by GHD (2013) Non Natural Rural Waste Site Survey Data Analysis, Environment Canterbury Report Number R13/52
http://ecan.govt.nz/publications/Reports/non-rural-wastes-survey-r13-52.pdf

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