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Demographics and management of dogs used to herd
livestock in New Zealand

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I hereby certify that the thesis has not been submitted for a higher degree at any University or Institution and work embodied in this thesis is my work unless noted otherwise in the acknowledgements.

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Abstract

The aim of this research was to describe the demographics, and husbandry and management of Livestock Herding (LH) Dogs in the Manawatau-Wanganui region of New Zealand. To achieve this, a cross-sectional survey of farms was carried out between July 2008 and July 2009. This survey generated data for 119 farms, 198 LH Dog owners, 1,194 LH Dogs, and 768 pups.

Farms in the Manawatau-Wanganui region were randomly selected from AgriBaseTM. One researcher visited each farm to conduct face-to-face interviews with the LH Dog owners. The information gathered during the interview pertained to the farm, to the husbandry and management of LH Dogs, and to the demographics of the LH Dogs that were currently on the farm or that had been on the farm over the previous 12 months. In addition information about adverse health events experienced by the LH Dogs in the 12 months prior to the survey was collected, but the analysis is not presented in this thesis.

In total 119 farms were involved and 1,194 LH Dogs were enrolled in the study. Five hundred and seventy-two LH Dogs were New Zealand Huntaways and 415 were New Zealand Heading dogs. The median age of LH Dogs was four years (minimum = 0.50 years, maximum = 18.00 years). Of the 1,152 LH Dogs whose sex and neuter status was known 642 were entire males, 439 were entire females, 48 were neutered females, while 23 were neutered males. Of the 1,157 LH Dogs whose career stage was known 48 had not received any training, 87 had initiated training, 190 were partly trained, 698 were fully trained, 63 were semi-retired, and 71 were retired. Of the 1,173 LH Dogs whose life stage was known 918 were alive and on the farm at the time of the interview, 104 had been euthanised by the owner of the LH Dog, 42 had been sold, 38 had died, 37 had been given away, and 34 had been euthanised by a veterinarian. One hundred and seven litters had been bred over the previous 12 months on 45 of the 119 farms producing a total of 768 pups. Four hundred and sixty-four pups had died of which 356 had been euthanised.

The median age at which training was initiated was known for 881 LH Dogs. This age was six months but this ranged from two to 84 months. One hundred and forty-two LH Dog owners reported striking their LH Dogs while training them to undertake livestock herding activities. Of the 1,180 LH Dog shelters reported on, 970 had been built by the farmer while 170 had been commercially acquired. An additional 40 LH Dogs were sheltered in ad hoc shelters such as farm sheds or vehicles. Two hundred and sixty-five LH Dog shelters had bedding within and 46 of these beddings had been changed over the previous 12 months. Eight hundred and fourteen of the 1,180 LH Dogs whose shelter description was obtained had their food placed on the floor of the shelter or run, while 363 had their food placed in a container. Twenty-four LH Dogs did not have access to water from the confines of their shelter. One hundred and seventy-seven LH Dog owners had fed their LH Dogs commercial dry food over the previous 12 months, and eleven had fed raw sheep offal. Two hundred and nine LH Dogs were fed less than once per day, 994 had been given anthelmintic drugs, 211 had been vaccinated, and 109 had been given a flea control treatment over the previous 12 months.

This thesis provides baseline information about LH Dog demographics, and the husbandry and management of LH Dogs in the Manawatau-Wanganui region of New Zealand. Future research should

focus on genetic and behavioural problems specific to New Zealand Huntaways and New Zealand Heading dogs as this is likely to assist the most LH Dogs. The association between the LH Dog neuter status and behaviour, and neuter status and health is worthwhile investigating since this information would aid LH Dog owners to make decisions pertaining to the neutering of their LH Dogs. The relationship between method of LH Dog training and the LH Dog's herding proficiency is also a worthy research topic, as is the relationship between method of LH Dog training and LH Dog health. Such research would be pioneering given science-based research specific to New Zealand LH Dog training has yet to be undertaken, and the outcomes of this research would enable LH Dog owners to make informed training decisions. Finally, future research should aim to develop our understanding of how certain LH Dog management practises impact on the ability of a LH Dog to herd, and should investigate the relationship between LH Dog management practises and LH Dog health. The outcomes of these investigations would be invaluable for decisions pertaining to LH Dog management.

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List of Abbreviations

LH Dog(s)	Livestock Herding Dog(s)
Σ	Sum
>	Greater than
<	Less than
95% CI	95% Confidence interval
NC	Not calculable
RR	Relative risk
GRTS	Generalized Random Tessellation Stratified design

