



## Winter grazing practices of dairy farmers across New Zealand

Oshadhi Samarasinghe and Pike Brown

### KEY POINTS

Wintering is an important aspect of dairy farm management, and if not carried out properly, can exacerbate water and soil quality problems and erosion. This policy brief reveals the following key points on winter grazing practices of dairy farmers using data from a national-level survey of farmers:

- Most dairy farmers winter stock on their own farms
- Most dairy farmers who winter their stock on someone else's farm choose to send the animals to farms within the same Territorial Authority. Thus, wintering off is not a panacea for improving environmental conditions at the local level
- 25% of the farmers who winter stock on their own farms do not have winter grazing infrastructure such as feed pads, standoff pads, winter lanes or wintering barns
- Inasmuch as councils promote wintering off as a mitigation practice, it is critical that they consider rules pertaining to infrastructure on support blocks.

### Wintering - Why do it, what are the effects

Wintering is an important aspect of dairy farm management. Monaghan (2012) defines animal wintering as the management approach undertaken to feed animals during winter months. This period also includes the period of drying off dairy cows and their subsequent calving. During the winter months when pasture/fodder crop growth is minimal, dairy stocks need to be provided other means of feed, whether on farm or off farm.

Grazing management over winter is important for environmental management as well as for animal and feed management and financial performance. Wintering, if not managed properly, can exacerbate water and soil quality problems and erosion (Monaghan 2012). If stock are grazed on pasture or fodder crops during winter, there is a possibility of exposing bare ground, and this will lead to soils becoming pugged and the ground becoming saturated in water, urine and nutrients (Environment Southland 2014). As the nutrient uptake of plants is lowest during winter, nutrient leaching — especially of nitrate (N) — are higher during winter months (Monaghan 2012). These excess nutrients could leach into groundwater or move across the land into waterways.

Dairy farmers can undertake several wintering practices, including keeping stock on farm by using specified areas for housing or feeding to confine the damage and sending the animals off farm for grazing, often to a dry-stock farm. Animal housing and feeding infrastructure need financial investment for construction and additional management skills. Wintering stock off farm also incurs transport costs.

Grazing stock off farm during winter does not totally avoid environmental problems. It may reduce the environmental damage if the wintering off location has better soil conditions or better housing or feeding infrastructure or it may just move the problem into a different location.

Under the National Policy Statement for Freshwater Management (NPS-FM) (MfE 2014) there is increasing pressure on regional councils to manage freshwater resources within limits. If wintering off is going to be continued as an important mitigation practice for nutrient management, it is important that the impacts of such actions are assessed at the regional level.

# Winter grazing practices of dairy farmers across New Zealand

So far, however, there has been little information collected from across New Zealand to assess either the number of dairy animals wintered off farm or the wintering off locations. Thus, the impact of wintering off as a nutrient management practice at the regional level can be difficult to assess. If a higher level of wintering off occurs within the same catchment or regional boundary, then there is no consequential improvement in overall environmental condition at the catchment or regional level. Therefore, knowing the share of dairy farmers who winter their animals off farm and the wintering off locations is valuable for regional councils seeking to manage and promote alternative winter management practices.

This policy brief focuses on wintering management options of dairy farmers using data from a national-level survey of farmers, the Survey of Rural Decision Makers (SRDM), which was conducted on-line between July and December 2015. More than 3000 people from across New Zealand responded, including more than 2300 commercial farm owners and farm managers (Brown 2015). The survey builds on an earlier survey conducted in 2013.

## Data

**Table 1:** Number of survey responses from dairy farmers in each region.

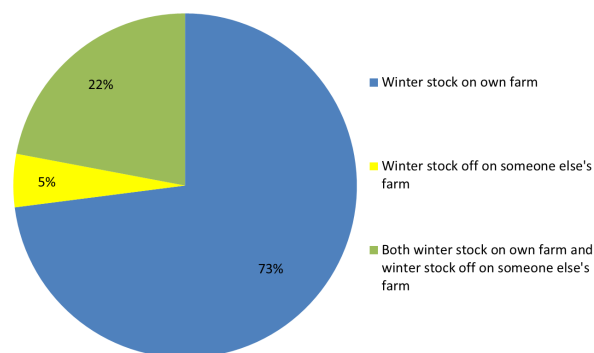
Region	Responses
Auckland	< 10
Bay of Plenty	36
Canterbury	44
Gisborne	< 10
Hawke's Bay	< 10
Manawatu-Wanganui	35
Marlborough	< 10
Northland	46
Otago	19
Southland	44
Taranaki	53
Tasman/Nelson	13
Waikato	144
Greater Wellington	14
West Coast	20

There are 481 respondents whose primary activity is recorded as dairy farming. We quantify the responses at the Territorial Authority (TA) level to identify spatial

distributions. We have combined some TAs in which the number of responses is low. Table 1 shows the numbers of responses from dairy farmers in each region.

## Wintering Management

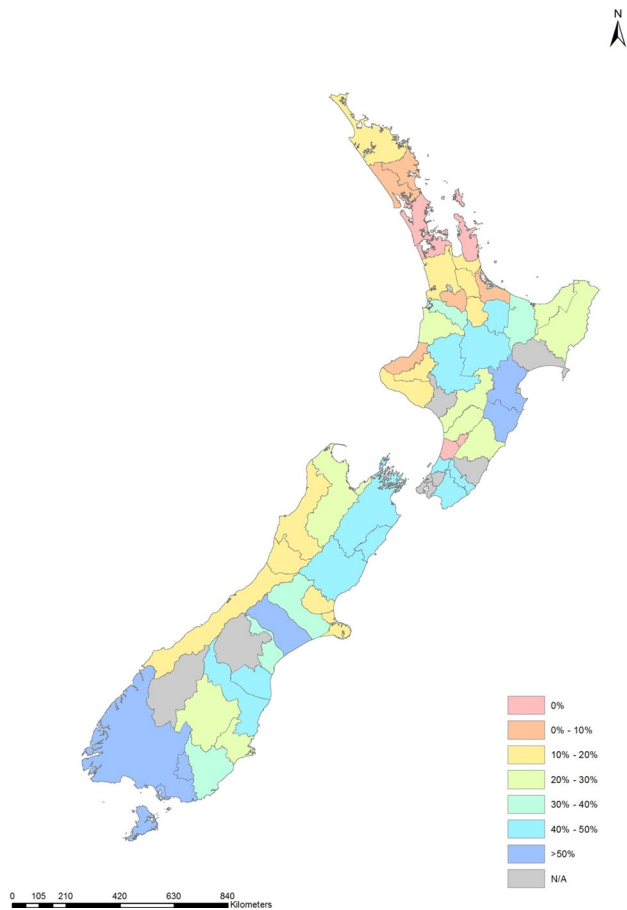
The 481 dairy farmers in the sample winter stock either on their own farm or on someone else's farm. Figure 1 shows the share of farmers who winter stock on farm, off farm, or both. The majority of farmers in the sample graze their animals on their own farms during winter. Approximately 27% of dairy farmers send some of their stock to someone else's farm for the winter months. For managing environmental impacts of dairy stock over winter at the local or regional level, it is important to determine (1) the winter management options used by the farmers who winter their stock on farm and (2) the locations to which the animals are sent by the farmers who winter stock off farm.



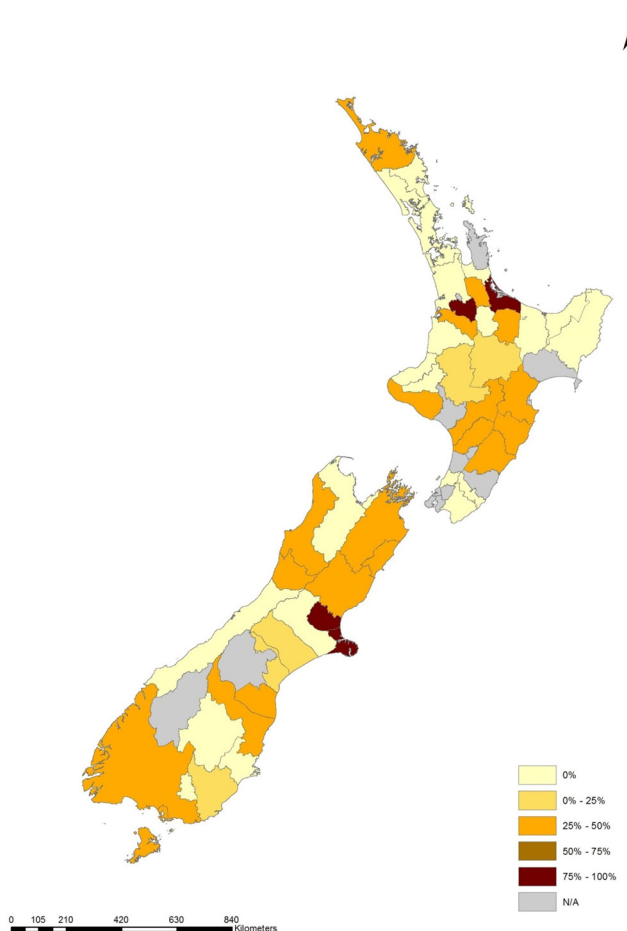
**Figure 1.** Winter grazing practices by dairy farmers across New Zealand.

## Wintering Off Locations

Invercargill and Southland, Ashburton, Gore and Central Hawke's Bay and Hastings TAs have the highest share of wintering off (Fig. 2). Overall, most farmers who winter some stock off farm choose to do so within their own TAs; only about 25% of those who winter off do it outside their own TAs. Ashburton, Clutha, Ruapehu and Taupō and Timaru have the lowest share of wintering off outside of the TA (Fig. 3). Survey responses reveal that most farmers who winter stock outside of their own TAs send their stock to the nearest or adjoining TAs for wintering, likely to reduce transport costs and to provide similar climatic conditions for the animals.



**Figure 2:** Percentage of dairy farmers who winter stock off at TA level.



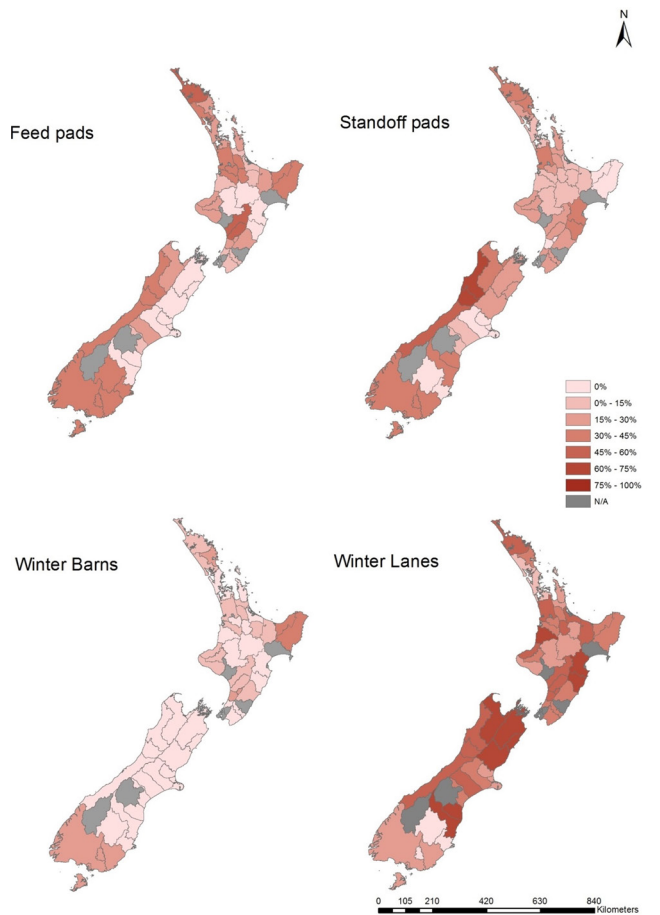
**Figure 3:** Percentage of dairy farmers who winter stock off outside of their own TAs.

The survey reveals that most of the wintering off occurs within the same region or catchment. Thus, promoting wintering off as a nutrient mitigation practice may not result in the water quality improvements expected unless the wintering off locations have substantially better soil conditions or better animal feeding/housing infrastructure. If wintering off is promoted as a mitigation option, regional councils may therefore wish to consider rules for dairy support blocks pertaining to the use of winter grazing infrastructure like animal housing and feed/standoff pads.

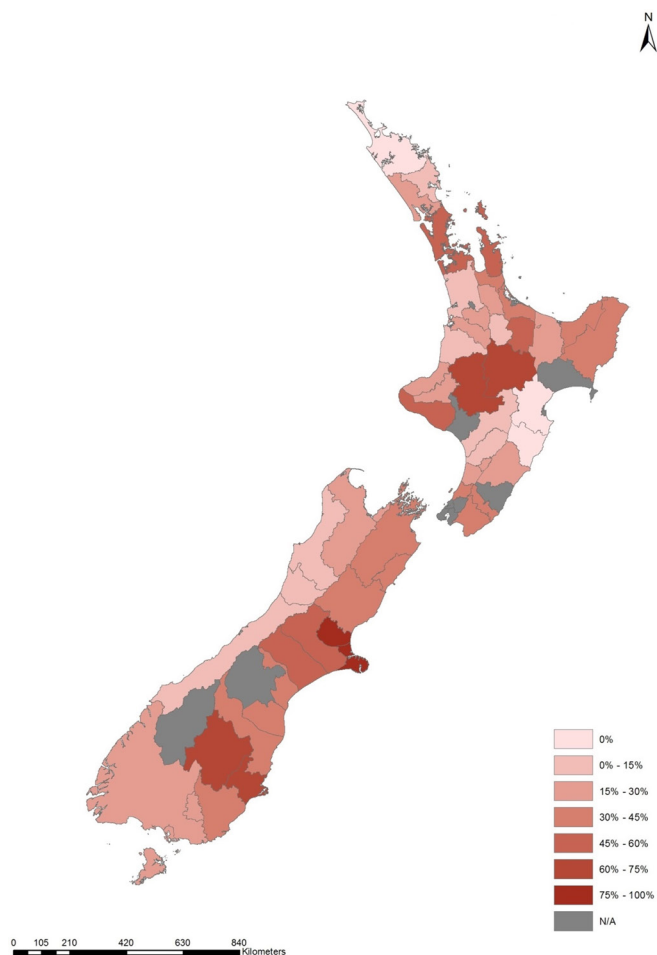
## Alternative wintering practices

As an alternative to grazing stock off farm, some farmers choose to winter their animals on their own farms using specified areas for housing or feeding to minimise environmental impacts over the winter months. The SRDM included questions about the following winter grazing infrastructure: feed pads, standoff pads, wintering barns and winter lanes. Of the respondents who winter some stock, 27% have feed pads, 23% have standoff pads, 6% have wintering barns and 37% have winter lanes. Figure 4 shows, at the TA level, the share of farmers who have each type of winter grazing infrastructure. Manawatū and Rangitikei, Far North, Waipa, Grey and Buller and Waikato Districts are the TAs that use the highest shares of feed pads, while Grey and Buller and Westland Districts have the highest shares of standoff pads. Use of wintering barns is low across the country, possibly due to high construction costs.

25% of the dairy farmers who winter some stock on their own farms do not have any of the winter grazing infrastructure considered in the survey. Figure 5 shows the percentage of farmers who do not have any of the winter grazing infrastructure at TA level. Christchurch and Waimakariri, Central Otago and Dunedin City, Rurapehu and Taupō and Selwyn TAs have the highest shares of farmers (>50%) with no winter grazing infrastructure. Farmers who winter their stock on their own farms but have no infrastructure to house or feed animals during winter may present greater risk for maintaining water quality.



**Figure 4:** Percentage of dairy farmers who have winter grazing infrastructure at TA level.



**Figure 5:** Percentage of dairy farmers who have no feed pads, standoff pads, wintering barns or winter lanes at TA level.

## Summary

Winter grazing management is an important aspect of dairy farming, and if not carried out appropriately, can contribute to environmental concerns such as water quality impairment, soil quality degradation and reduced erosion control. In general, dairy farmers either keep stock on farm during winter using specified areas for housing or feeding or send the stock off to someone else's farm for grazing. Of the 481 people whose primary activity is recorded as dairy farming in the SRDM, the majority winter animals on their own farms. Of those who winter animals on their own farms, 25% do not have any of the winter grazing infrastructure considered in the survey and may present greater risk for maintaining water quality. In addition, most of the wintering off occurs within the same TA. Promoting wintering off as a nutrient mitigation practice may therefore not result in the overall water quality improvements expected at the regional or catchment level unless the wintering off locations have substantially better soil conditions or better animal feeding/housing infrastructure. Inasmuch as councils promote wintering off as a mitigation practice, it is critical that they consider rules pertaining to infrastructure on support blocks.

## References

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## Contacts

- Oshadhi Samarasinghe  
Landcare Research, Private Bag 92170, Auckland 1142  
[samarasingheo@landcareresearch.co.nz](mailto:samarasingheo@landcareresearch.co.nz)
- Pike Brown  
Landcare Research, P.O. Box 69040, Lincoln 7640  
[brownp@landcareresearch.co.nz](mailto:brownp@landcareresearch.co.nz)