



CARING
FOR
OUR
COUNTRY

Land management practice trends in Tasmania's dairy industry



Introduction

Dairy farming is an important industry in Tasmania, contributing more than \$232 million to the gross value of agricultural production in the state and 0.6 per cent to the gross value of Australia's agricultural production in 2009–10 (ABS 2011). The major locations of dairy businesses are shown in Figure 1.

Improving soil condition is important to agricultural productivity and the quality of ecosystem services provided to the community from rural lands. Wind and water erosion, soil carbon rundown and soil acidification reduce the land's ability to provide productive soils, protect biodiversity, maintain clean air and water and withstand the effects of climate change, while producing food and fibre.

Caring for our Country—the Australian Government's \$2 billion flagship natural resource management initiative—is funding projects in the sustainable farm practices national priority area under the improving management practices and landscape scale conservation targets.

Dairy industry profile

According to ABS estimates, in 2009–10 Tasmania had 542 dairy businesses which reported 161 342 hectares of grazing land. The average age of managers of dairy businesses was 50 years; on average they had

These projects provide information to farmers in the broadacre cropping, dairy, horticulture and beef cattle/sheep industries about land management practices that will help improve soil condition and contribute to maintaining a healthy environment.

By 30 May 2012, \$448 million had been approved for projects to improve soil and biodiversity management practices on farm. On farm practice change is being monitored using the biennial Australian Bureau of Statistics (ABS) Agricultural Resource Management Survey (ARMS), which surveys 33 000 of Australia's 135 000 agricultural businesses (farmers). Results are reported at the national, state and natural resource management region levels (ABS 2009). The numbers reported are estimated from a sample of almost one quarter of all agricultural businesses, so the results are subject to sampling error. This is most pronounced for questions with lower response rates, more likely in smaller industries such as the dairy industry. Data were not publishable for some practices in regions where the numbers of dairy businesses were small.

managed their holdings for 19 years and farmed in their local region for 25 years. An estimated 17 per cent of dairy businesses (95) had a Landcare group member.

Figure 1

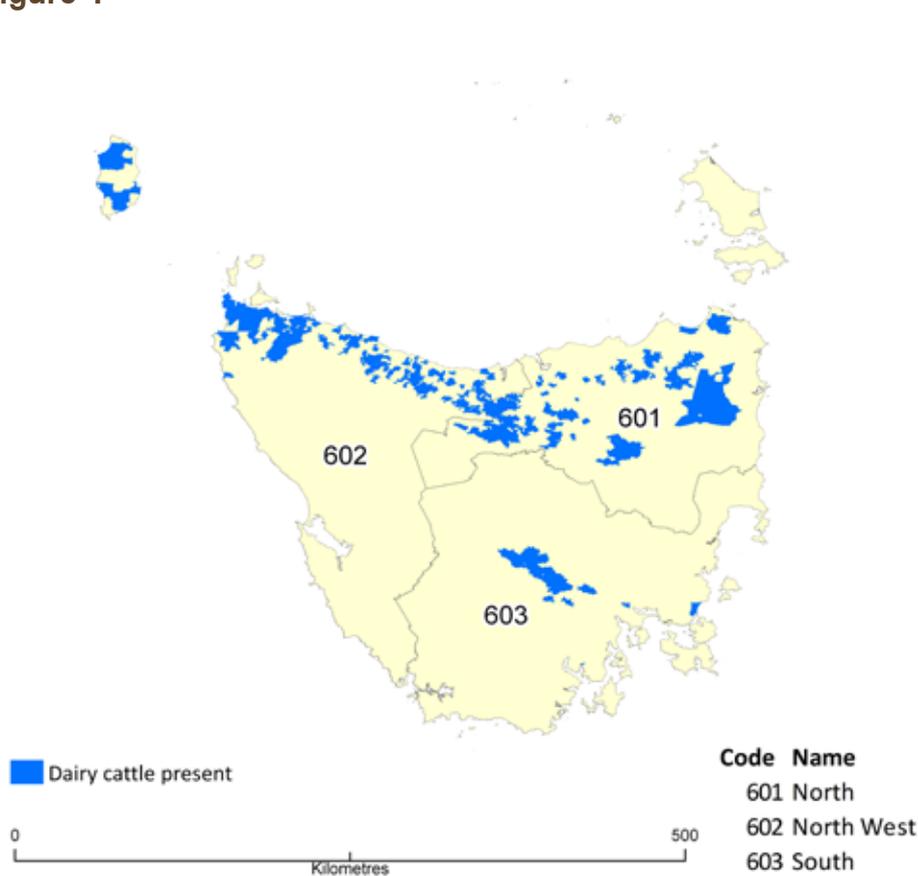


Figure 1. Indicative distribution of dairy businesses in Tasmania.
Source: 2005–06 ABS agricultural census (mesh blocks containing dairy farms).

Land management practices

Caring for our Country provided project funding to encourage dairy farmers to better manage ground cover (by monitoring the proportion of soil covered by plants and managing to ground cover targets) and to test and lime soils regularly where needed. This funding has complemented the activities of state agencies and some industry and community groups.

Data from the ABS 2007–08 and 2009–10 ARMS and agricultural censuses for 1995–96 and 2000–01 (which surveyed all agricultural businesses) help track trends in the adoption of these practices.

Managing soil acidity

About a quarter of Tasmania's more intensively managed grazing land is thought to have a high risk of soil acidification and 14 per cent a moderate risk (Figure 2, Table 1). This includes some of the land used for dairying. Very acid soils are unlikely to support good ground cover, increasing the risk of soil loss through

wind and/or water erosion and reducing input to soil carbon. Areas at high risk are where soil pH is low, the soil has a low capacity to buffer against pH decreases and the dominant (current and/or past) agricultural practices are highly acidifying.

Figure 2

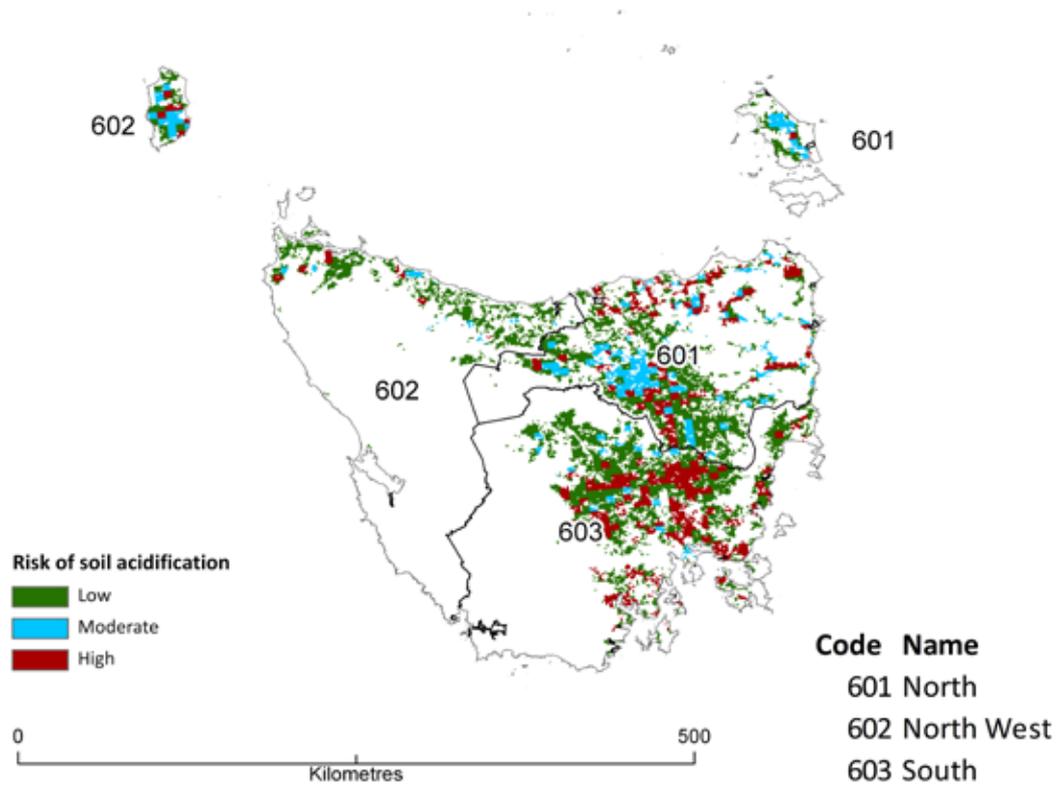


Figure 2. Soil acidification risks for grazing land in Tasmanian natural resource management regions. This map was produced by intersecting grazing land (on native or modified pastures including irrigated) from Land use of Australia 2005–06 (ABARE–BRS 2010) with the soil acidification risk map produced by Wilson et al. 2009 and masking to natural resource management regions.

Table 1

	Low risk (%)	Moderate risk (%)	High risk (%)
North	55	24	21
North West	75	15	10
South	62	4	34
Tasmania	61	14	25

Table 1. Estimated percentage of the more intensively managed grazing areas in Tasmanian natural resource management regions at risk of soil acidification. Source: See figure 2.

For dairy pastures in areas with soils prone to acidification, regular testing of soil pH and applications of lime and/or dolomite can be used to manage acidification. Testing soil nutrient levels to better match fertiliser applications to pasture requirements can also help slow soil acidification.

The estimated number of dairy businesses across Tasmania undertaking pH testing increased (from 40 per cent to 44 per cent) between 2007–08 and 2009–10, while the number of dairy businesses undertaking nutrient testing did not change (37 per cent; Figure 3). Estimated increases in soil pH and nutrient testing occurred in the North West and South regions. The largest increase in the percentage of farmers testing soil pH and soil nutrients occurred in the South region (from 32 to 46 per cent and 16 to 46 per cent respectively; Figure 3).

Maintaining ground cover

Monitoring ground cover levels in paddocks and managing to ground cover targets (the desired percentage of soil covered by living or dead vegetation) helps protect the soil from loss through wind and water erosion, while helping to build soil carbon. Maintaining good ground cover also improves drought resilience by ensuring pastures can respond quickly to rain.

The estimated percentage of dairy businesses monitoring ground cover levels in paddocks increased from 68 per cent in 2007–08 to 91 per cent in 2009–10; the percentage setting ground cover targets decreased

In the North region there were estimated decreases in soil pH testing (from 44 per cent to 37 per cent) and soil nutrient testing (from 44 per cent to 37 per cent; Figure 3).

The percentage of dairy businesses estimated to be applying lime or dolomite to manage soil acidity increased in Tasmania from 44 per cent to 45 per cent between 2007–08 and 2009–10 (Figure 4). Increases occurred in the North and North West regions (from 39 to 44 per cent and from 49 to 52 per cent respectively; Figure 4). Longer-term data for dairy businesses in Tasmania show that an estimated 42 per cent applied lime or dolomite in 1995–96; this increased to 54 per cent in 2000–01, decreasing to 42 per cent in 2009–10 (Figure 5). Table 2 shows the rates of lime application for Tasmanian dairy businesses in 2007–08.

from 39 per cent in 2007–08 to 21 per cent in 2010–11 (Figure 6). The percentage of dairy businesses estimated to be monitoring ground cover in paddocks increased in the North West region between 2007–08 and 2009–10 (from 55 per cent to 95 per cent; Figure 6). However, the percentage of dairy businesses setting ground cover targets in the North West region decreased between 2007–08 and 2010–11 (from 38 per cent to 21 per cent; Figure 6).

Figure 3

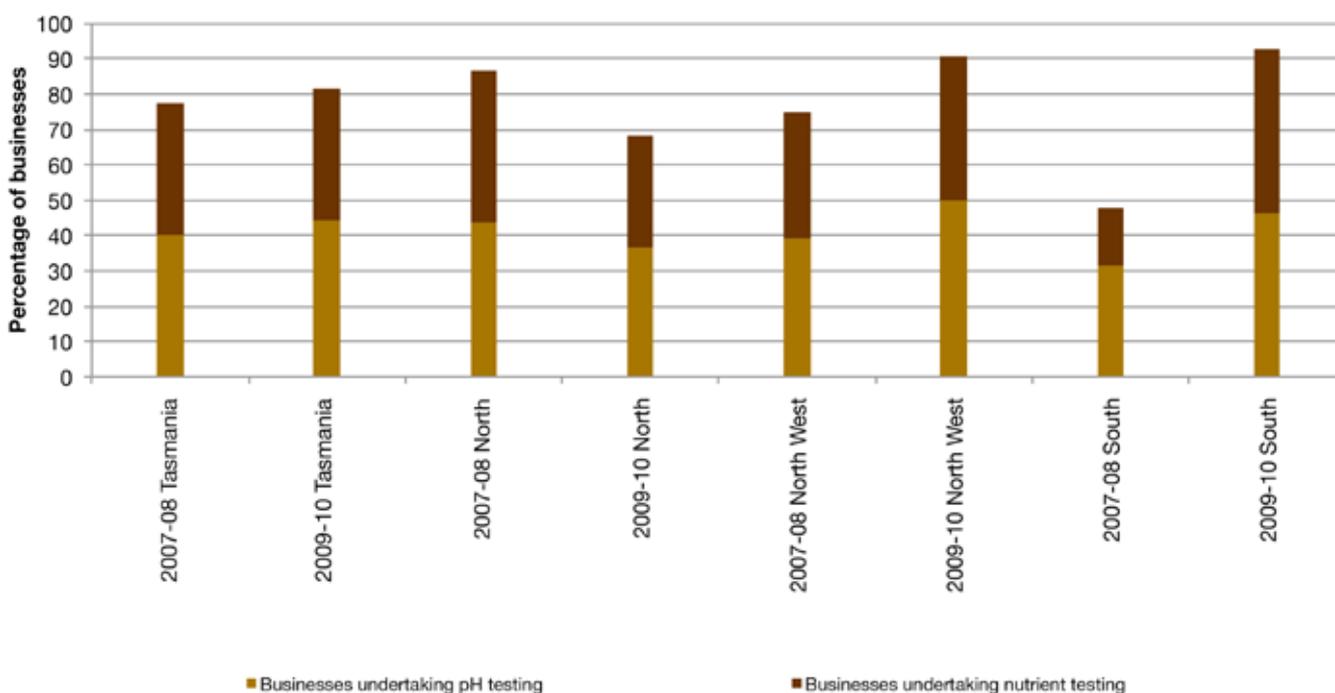


Figure 3. Percentage of dairy businesses in Tasmania undertaking pH and soil nutrient testing, 2007–08 and 2009–10.

Figure 4

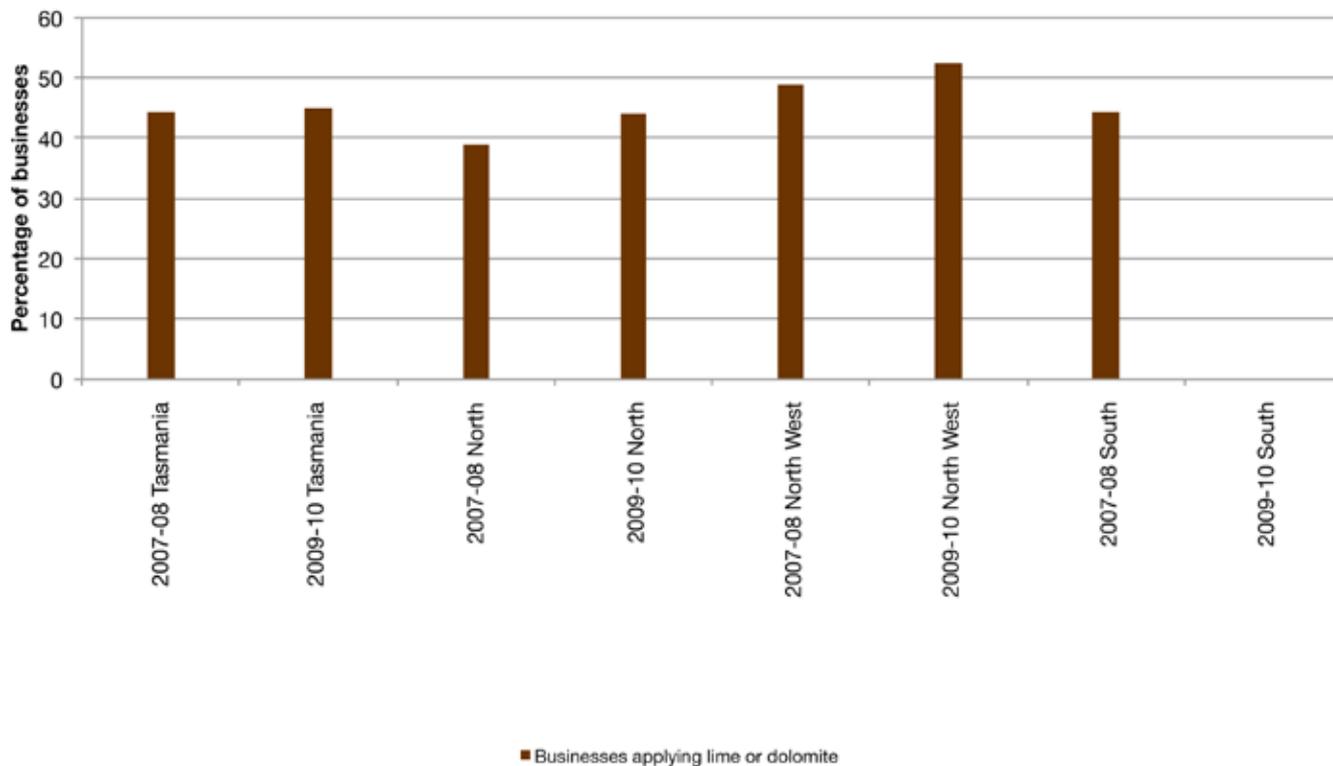


Figure 4. Percentage of dairy businesses in Tasmania applying lime and dolomite to their holdings, 2007–08 and 2009–10.

Figure 5

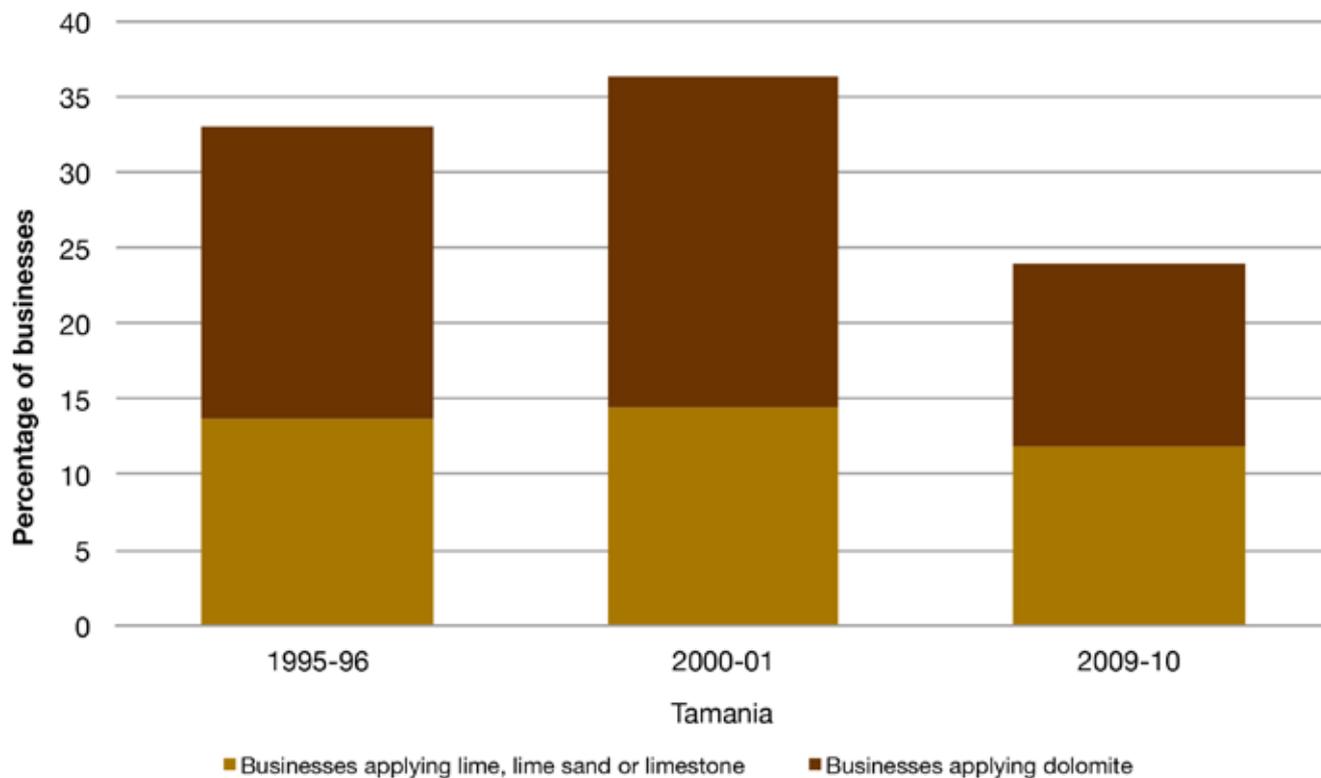


Figure 5. Percentage of dairy businesses in Tasmania applying lime or dolomite to their holdings, 1995–96, 2000–01 and 2009–10.

Figure 6

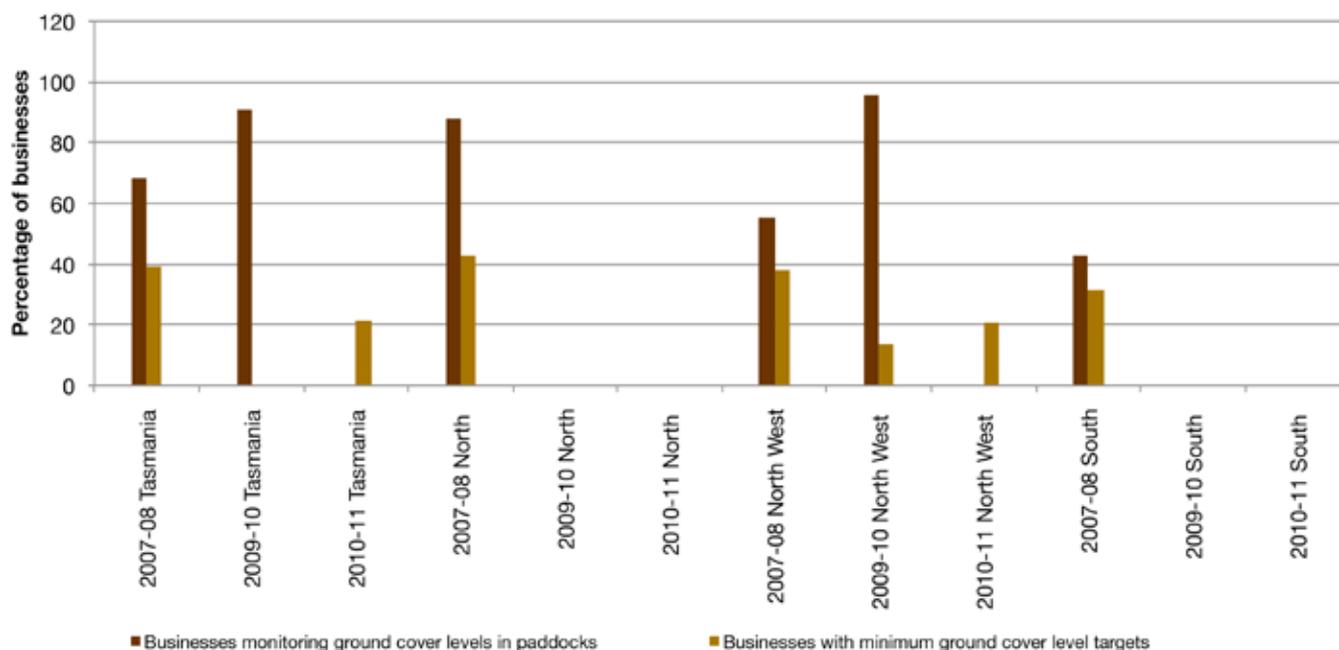


Figure 6. Percentage of dairy businesses in Tasmania monitoring ground cover in paddocks, 2007–08 and 2009–10, with targets for minimum ground cover levels, 2007–08, 2009–10 and 2010–11. Note: No data for ground cover monitoring were collected in 2010–11. Results for dairy businesses with targets for minimum ground cover level were not publishable for Tasmania (2009–10) and the North (2009–10, 2010–11) and South (2009–10, 2010–11) regions. Results for dairy businesses monitoring ground cover in paddocks were not publishable for the North (2009–10) and South (2009–10) regions.

Table 2

	Tonnes (t) of lime and/or dolomite applied	Lime and/or dolomite application rate (t/ha)
Tasmania	11 660	0.40
North	5 030	0.50
North West	5 934	0.33
South	696	0.78

Table 2. Rates of lime application for Tasmanian dairy businesses, 2007–08.

Conclusions

The data suggest that more Tasmanian dairy businesses are monitoring ground cover but fewer are setting ground cover targets. Ground cover levels of at least 50 per cent to 70 per cent (depending on location) are needed to protect the soil surface from wind and water erosion. Further work is needed to encourage dairy businesses to set and manage to groundcover targets appropriate to their location.

Given the extensive and insidious nature of soil acidification, with almost two-fifths of all grazing land in Tasmania at moderate to high risk of acidification, it may be necessary to increase regular testing and, where necessary, liming of dairy pastures.

References

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