



SUSTAINABLE DAIRYING –

# WATER ACCORD

A commitment to New Zealand  
by the dairy sector

## TWO YEARS ON...

*What have we achieved?  
What do we need to keep working on?*







# Sustainable Dairying: Water Accord

The Sustainable Dairying: Water Accord (the Accord) has been developed under the oversight of the Dairy Environment Leadership Group (DELG). DELG includes representatives from farmers, dairy companies, central government, regional councils and the Federation of Māori Authorities.

## Accountable Partners

In accordance with this Accord, the following parties have specific responsibilities and are accountable for delivering the commitments and monitoring and reporting as specified. They undertake to carry out those responsibilities in good faith and to the best of their abilities.



Michael Spaans  
Chair



Dairy for life

John Wilson  
Chairman



Laurie Margrain  
Chairman



Kingi Smiler  
Chairman



Graeme Milne  
Chairman



Stephen Allen  
Chairman



Malcolm Bailey  
Chairman



Roger Usmar  
General Manager

## Supporting Partners

Supporting Partners make commitments to the outcomes of this Accord in support of the Accountable Partners.



## Friends of the Accord

Friends of the Accord are supportive of the purpose of this Accord and commit to contribute to its success in the spirit of collaboration.

- Westland Milk Products
- Regional/Unitary Councils: Northland Regional Council; Auckland Council; Waikato Regional Council; Bay of Plenty Regional Council; Hawke's Bay Regional Council; Gisborne District Council; Taranaki Regional Council; Horizons Regional Council; Greater Wellington Regional Council; Environment Canterbury; West Coast Regional Council; Marlborough District Council; Tasman District Council; Otago Regional Council; Environment Southland
- The Federation of Māori Authorities
- Ministry for Primary Industries
- Ministry for the Environment







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The Dairy Companies Association of New Zealand (DCANZ) is the umbrella body of companies processing milk in New Zealand.  
[www.dcanz.com](http://www.dcanz.com)

DairyNZ is the industry organisation representing New Zealand's dairy farmers, funded by farmers through a levy on milksolids.  
[www.dairynz.co.nz](http://www.dairynz.co.nz) or [www.dairyatwork.co.nz](http://www.dairyatwork.co.nz)





## Foreword

*This is the second annual progress report for the Sustainable Dairying: Water Accord. We have made some real and meaningful progress during the 2014/15 dairy season.*



We are very pleased to present the second annual progress report for the Sustainable Dairying: Water Accord. Turning commitment into action is always a challenge, but real and meaningful progress has been made during this second dairy Accord season.

We continue to recognise and applaud the efforts of farmers, dairy companies, DairyNZ and our Supporting Partners and Friends for their efforts to date on this massive undertaking, and urge everyone to continue on the path of continual improvement.

It has been an especially challenging financial time for dairy farmers across the country in this second Accord reporting year but progress on the Accord commitments has been significant.

We continue to work closely with regional councils around the country to assist them with implementation of the National Policy Statement for Freshwater Management (2014). This involves being part of community collaborative processes that are setting water quality and quantity limits for different waterways throughout New Zealand. We are committed as an industry to farming within environmental limits to maintain and enhance the land and resources that our industry relies upon.

Further information on all our industry initiatives can be found at [www.dairyatwork.co.nz](http://www.dairyatwork.co.nz).



**Michael Spaans**  
Chair  
DairyNZ



**Malcolm Bailey**  
Chairman  
Dairy Companies Association of New Zealand





## *The Sustainable Dairying: Water Accord*

*The Sustainable Dairying: Water Accord was launched in July 2013.*

*This second annual progress report aims to set out what the Accord has achieved in its second year of operation for the dairy season June 2014 to May 2015.*



This Accord involves a large number of industry players as well as New Zealand's dairy companies. It has commitments and targets for five key areas:

- Riparian management
- Nutrient management
- Effluent management
- Water use management
- Conversions.

The purpose of the Accord is to enhance the overall performance of dairy farming as it affects freshwater by:

- Committing to good management practices expected of all dairy farmers in New Zealand
- Recording pledges by the dairy sector, with the support of others, to assist and encourage dairy farmers to adopt those good management practices and to monitor and report progress.

## *Collating the Accord report*

The total number of farms covered by the Accord is approximately 11,500.

This includes farms supplying the dairy companies Fonterra, Miraka, Open Country, Synlait and Tatua, but excludes farms supplying other dairy companies.

Oceania has joined the Accord as a full accord partner and will be reporting through in the next season but already has all the Accord initiatives underway.

Westland Milk Products continues as a Friend of the Accord.

A number of the Accord commitments are defined in terms of percentage of farms achieving a certain standard. In these cases, we have recorded the number of farms reported by each dairy company as meeting the standard and have then divided that total by 11,500 to estimate overall national achievements.

Accountable and Supporting Partners have developed and are implementing diverse programmes to achieve environmental commitments outlined in the Accord. We have summarised these where relevant in the different reporting areas.

## **Verification of data and figures**

An independent audit has been undertaken on the data used in the preparation of this report (see page 40 for Auditor's Statement).

### **Two recommendations from the independent audit report for 2013/14 have been implemented.**

1. The Water Accord was reviewed in 2014/15 and minor changes were made. A revised version was published in December 2015. A full review of the Water Accord will take place in 2016/17.
2. A thorough review of the audit standards for the Water Accord was carried out in 2014/15. This resulted in standard template forms that were provided to the dairy companies to ensure consistent and aligned reporting.

### **How does the audit verify information in this report?**

As part of the audit process, the auditors spend eight days auditing DairyNZ and the Water Accord dairy companies (to verify the information coming from the dairy company to DairyNZ for collation in this report). The auditors also spend 40 days going onto 77 farms randomly selected from DairyNZ's database to verify the information coming from the farmer to the dairy company.

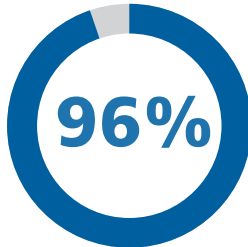
To read the independent audit report, please go to [www.dairyatwork.co.nz](http://www.dairyatwork.co.nz) or [www.dairynz.co.nz/wateraccord](http://www.dairynz.co.nz/wateraccord)



# Summary and highlights

**TWO  
YEARS ON**

## WHAT WE'VE ACHIEVED SO FAR...



**96%** of the waterways<sup>1</sup> on New Zealand dairy farms are now excluded<sup>2</sup> from dairy cattle.

This represents 25,656 kilometres of fenced-off and measured waterways.



**MORE THAN 99%**

of 42,773 regular stock crossing points<sup>3</sup> on dairy farms now have bridges or culverts to protect local water quality.

**8,598 nutrient budgets have been processed in 2014/15**



to give useful nitrogen leaching information back to farmers. This represents 75% of the industry.



Over one billion dollars has been spent by farmers on environmental initiatives over the last five years, with the majority of investments (70%) on effluent system upgrades.



Significant non-compliance for dairy effluent discharges has dropped to its lowest on record

**5.8%.**



The Primary ITO (Industry Training Organisation)

**has doubled the number of farm staff annually attending effluent training to 508.**



**THERE ARE NOW 100 certified Nutrient Management Advisers**

operating across the country.

**Nine regionally-tailored planting guidelines for waterways have been produced**

for farmers with information on recommended set-back distances, planting density and appropriate plant species.





## We are...

very close to 100% on a number of targets such as stock exclusion from waterways and providing bridges or culverts for stock crossings.

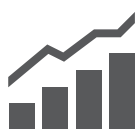
### Dairy companies have...

identified 175 new dairy farm conversions since 2013. 29% measured as complying with standard by May 2015, 81% by March 2016.

## We made great strides towards...

our target of 100% of dairy farms providing quality nutrient management data. It's currently sitting at 75%, up from 56% last year.

### THE TOUGHEST CHALLENGES ARE STILL...



#### Collecting nutrient management data and performance benchmarking

The collection of nutrient management information is still one of our biggest challenges. That's because of the level of information required and the individual processing through the computer modelling tool OVERSEER to produce a reliable Nitrogen (N) loss estimate for each farm.

We are driving continual improvements in the quality of data from the farmer and also of information going back to farmers. We are keeping the focus on nutrient management data collection at the farm level and how to benchmark and deliver quality and useful information back to farmers.



#### Collecting information on significant wetlands in regional council boundaries

Collecting this information is proving problematic with all councils having different definitions and identification processes. More work is planned in this area, including ongoing engagement with regional councils.

### WE'VE MADE THE MOST PROGRESS ON...

Fencing off waterways and drains and excluding them from dairy cattle



Bridging or culverting regular stock crossing points



Engaging farmers and their advisors in environmental training, assessment and actions



Ensuring farmers have more certified experts they can turn to for nutrient management advice



Regional waterway planting management advice tailored to farmers



<sup>1</sup>The Accord defines a waterway as a lake, spring, river or stream that permanently contains water and any significant wetland. Waterways and drains greater than one metre in width and deeper than 30cm are included in the definition. Stock exclusion from streams smaller than that definition may be negotiated as part of regional programmes of action.

<sup>2</sup>The Accord defines stock exclusion from waterways as "effectively barred from access to water and to the banks of a waterway either through a natural barrier (such as a cliff) or a permanent fence, except for any regular stream crossing point."

<sup>3</sup>The Accord defines a regular stock crossing point as "a point on a waterway or drain where dairy cattle cross to access the milking shed, then return following milking, more than once per month." In these cases they must be bridged or culverted.





# Two Years On...

## How are we doing?

In the following sections, we report back on the key commitments of the Sustainable Dairying: Water Accord and what has been achieved in its first two years of operation.

We have made good progress from last year on verifying our data and systems and achieving key targets. We have also worked on getting better and more consistent data collection/aggregation across all dairy companies.

A new edition of the Sustainable Dairying: Water Accord was published in December 2015 with minor updates and revisions as part of a reprint of the original version. Minor changes were made to ensure consistent annual reporting of obligations and to include Oceania Dairy as a new Accountable Partner to the Accord. Oceania Dairy is owned by the Chinese dairy giant Inner Mongolia Yili Industrial Group (Yili). It is based at Glenavy in Canterbury.

### Looking ahead – first review

In 2016/17 we will begin a review of the Accord, to meet our commitment to complete a first review before 1 June 2017. As well as looking at progress towards targets and commitments, the review will also consider the contribution all the parties involved have made to the purpose, vision and approach section of the Accord.










You can view the updated version of the full Sustainable Dairying: Water Accord at [www.dairynz.co.nz/wateraccord](http://www.dairynz.co.nz/wateraccord) or [www.dairyatwork.co.nz](http://www.dairyatwork.co.nz)

### Key to target status symbols







# Two years on – quick summary


TARGET	STATUS	
<b>RIPARIAN MANAGEMENT</b>		
90% stock exclusion of the length of waterways present on dairy farms by 31 May 2014; 100% by 30 May 2017		ON TRACK (96% in 2014/15)
100% of regular stock crossing points are either bridged or culverted by 31 May 2018		IN PROGRESS AND ON TRACK (99% crossings with bridges/culverts by 2014/15)
100% stock exclusion of all wetlands identified by a regional council as at 31 May 2012 by 31 May 2014		NOT YET ACHIEVED; IN PROGRESS (Still an area of ongoing engagement with regional councils)
50% of dairy farms with waterways will have a riparian management plan by 31 May 2016		IN PROGRESS
All of these farms will have completed half of their riparian plan commitments by 31 May 2020; full implementation by 31 May 2030		IN PROGRESS AND ON TRACK
Riparian guidelines completed for nine regions by 31 May 2015		ACHIEVED
<b>NUTRIENT MANAGEMENT</b>		
Nutrient management data collected from 85% of dairy farms by 31 May 2014; 100% by 31 May, 2015		NOT YET FULLY ACHIEVED; STILL IN PROGRESS (75% achieved by 2014/15)
Nitrogen loss and Nitrogen conversion efficiency performance information reported back to 85% of dairy farms by 30 November 2014; 100% by 30 November 2015		NOT YET FULLY ACHIEVED; STILL IN PROGRESS (75% achieved by 2014/15)
50% of Fertiliser Association of New Zealand member company nutrient management advisers are certified by 31 May 2014		ACHIEVED

TARGET	STATUS	
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**EFFLUENT MANAGEMENT**

100% of farms are being assessed by 31 May 2014		ACHIEVED
A farm dairy effluent Warrant of Fitness scheme available as a tool for farmers by 31 May 2014		ACHIEVED

**WATER USE MANAGEMENT**

85% of all dairy farms to install water meters by 2020		IN PROGRESS AND ON TRACK (30% farms with water meters by 2014/15)
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**CONVERSIONS**

All new dairy farm conversions comply with environmental standards before milk supply commences		IN PROGRESS (29% measured as complying with standard by May 2015; 81% by March 2016)
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# *Riparian Management*

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## **EXPECTATIONS:**

- Dairy farms will exclude dairy cattle from significant waterways and significant wetlands
- Riparian planting will occur where it would provide a water quality benefit
- The crossing of waterways by dairy cows will not result in degradation of those waterways



## STOCK EXCLUSION & CROSSINGS

Dairy companies have reported 95.6% stock exclusion of Accord waterways for the 2014/15 season with 98.3% of all farms verified. 26,700 km of measured Accord waterways with 25,657 km stock excluded.

The Taranaki region (~1700 farms) sits outside the Riparian Management commitments of the Accord due to an existing agreement between Fonterra, Taranaki Regional Council and central government that expired in 2015. The Taranaki Regional Council reports 80% of stream banks are fenced and 65% of stream banks are vegetated (<http://www.trc.govt.nz/healthy-report-for-region-s-rivers/>).

### TARGET

**90% stock exclusion of the length of waterways present on dairy farms by 31 May 2014; 100% by 30 May 2017**



ON TRACK  
(96% in 2014/15)

Just over 2% of measured Accord waterway length on farm is subject to stock exclusion dispensations. Many of these are short-term extensions to allow farmers time to replace temporary fences with permanent ones, or associated with areas where frequent natural flooding precludes the use of permanent fences.

Dairy companies have identified 42,773 stock crossings on dairy farms, which is an increase of 7,000 identified crossings from last year. 98.3% of farms were assessed, and greater than 99% of regular crossing points identified have bridges or culverts as at 31 May 2015.

### TARGET

**100% of regular stock crossing points are either bridged or culverted by 31 May 2018**



IN PROGRESS  
AND ON TRACK  
(99% crossings with bridges/culverts by 2014/15)

As reported by dairy companies, dispensations for stock crossings have been granted in a very small number of situations (less than 0.1%).


## SIGNIFICANT WETLANDS

Work between the dairy industry and regional councils has improved the identification of significant wetlands in some regions (i.e. defined as those identified in an operative regional policy statement or plan).

Only some regions have significant wetlands scheduled in operative regional plans or regional policy statements since 31 May 2012. Six regional councils have significant wetlands scheduled, with three of these having available Geographic Information Systems location data for stock exclusion to be assessed against. Due to information gaps, not all significant wetlands on dairy farms were assessed. However 100% of the farms that were assessed had stock exclusion. Work continues between the dairy industry and regional councils to improve the identification of significant wetlands in some regions in order to progress this target at a national scale.



The dairy industry is currently considering a revised definition of a wetland to more fairly reflect progress on this target of protecting wetlands. One idea is to verify what is fenced or not during the usual inspection/verification process on a farm and include waterways on that record.

<p><b>TARGET</b></p> <p><b>100% stock exclusion of all wetlands identified by a regional council as at 31 May 2012 by 31 May 2014</b></p>		<p>NOT YET ACHIEVED; STILL IN PROGRESS (Still an area of ongoing engagement with regional councils)</p>
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**RIPARIAN PLANTING**

Progress is being made in implementing riparian management plans to enhance water quality on farms. DairyNZ has produced an online tool to assist farmers and rural professionals to develop riparian management plans.

Dairy farmers have worked with regional councils to implement riparian planting. Taranaki Regional Council has prepared riparian management plans for 99.8% of dairy farms in Taranaki. These plans encapsulate over 14,000 kilometres of ground-truthed stream bank which includes streams smaller than 1m wide and less than 30cm deep. In addition to the existing fencing and vegetation present, 5,483 kilometres has been recommended for new planting and 6,369 kilometres for new fencing. Taranaki farmers have planted and fenced 2,138 kilometres and 4,084 kilometres of stream bank (respectively) with over 3.9 million native plants through the council’s native plant scheme. 83% of stream banks are now fenced and 64% vegetated where planting is recommended.

<p><b>TARGET</b></p> <p><b>50% of dairy farms with waterways will have a riparian management plan by 31 May 2016*</b></p>		<p>IN PROGRESS</p>
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\*This target date is unlikely to be met as the dairy industry has concentrated recent efforts on developing the GIS software mapping programmes to ensure that a nationally consistent and efficient process can be implemented through the dairy companies.

<p><b>TARGET</b></p> <p><b>All of these farms will have completed half of their riparian plan commitments by 31 May 2020; full implementation by 31 May 2030</b></p>		<p>IN PROGRESS AND ON TRACK</p>
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DairyNZ, in partnership with regional councils, has produced nine regionally-tailored riparian guidelines for Waikato, Southland, Otago, Wellington, Northland, Westland, Canterbury, Bay of Plenty and Manawatu-Wanganui regions. The guidelines include information on recommended set-back distances, planting density and appropriate plant species for specific objectives. The guides are available from: [dairynz.co.nz/environment/waterways/](http://dairynz.co.nz/environment/waterways/)



## TARGET

Riparian guidelines completed for nine regions by 31 May 2015



ACHIEVED

## CASE STUDY



### Windy challenge in the Ruahines

Brian and Alison Baxter have a windswept dairy farm near the base of the Ruahines. They milk 320 cows on 130 hectares. The creeks which run through their farm are fed by springs with very high water quality. The Baxters have been planting for four years and have put in 2500 plants.

The Baxters have planted hardy species to survive blustery conditions. Alison is the designer, laying out where the plants should go; the boys follow after her, digging and planting them. They plant flax, toetoe, cabbage trees and twiggy tree daisy.



## CASE STUDY



### Planting for bees in Kerikeri

Ann and Stephen Kearney milk 360 cows near Kerikeri. To improve water quality, they began planting manageable sections along the 5.5 kilometres of their farm waterways in 2004. The farm is located near the Puketiki Forest and its streams feed the Kerikeri River. Ann and Stephen began fencing their riparian zones in the 1990s after helping students from Okaihau College investigate the effects of stock access on water.

Ann likes to plant trees for bees, such as manuka and kanuka. Bees help pollinate their clover which in turn increases soil fertility. Puriri and miro have also been planted to feed kereru.

For more information visit [www.dairynz.co.nz/waterways](http://www.dairynz.co.nz/waterways)





# *Nutrient Management*

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## **EXPECTATIONS:**

- Dairy farmers will manage Nitrogen (N) and Phosphorus (P) loss from dairy farming systems, acknowledge the need to manage within nutrient loss limits and pursue continuous improvement in nutrient use efficiency

## NUTRIENT MANAGEMENT DATA COLLECTION

Every dairy company has developed programmes to collect nutrient management data from their dairy farmers and model these using agreed protocols (OVERSEER Best Practice Data Input Standards). Data collection and verification systems for the 2014/15 season have improved considerably in this last season, with all Accord dairy companies reporting nitrogen information from their suppliers.

Several companies have included provision of nutrient management data in their conditions of supply but not all farmers were able to provide the required data within the requested timeframes.

During the 2014/15 season, 8,598 nutrient budgets were processed and nitrogen information provided back to farmers. This represents 75% of the industry and is a significant gain from the 56% achieved for year one Accord reporting.

Collection and reporting on nutrient management information is one of the most challenging targets to meet in the Accord. The industry is committed to monitoring and reporting nutrient management performance on-farm and driving continual improvements in the quality of data from the farmer and also of information going back to farmers.

### TARGET

**Nutrient management data collected from 85% of dairy farms by 31 May 2014; 100% by 31 May, 2015**



NOT YET FULLY ACHIEVED; STILL IN PROGRESS (75% achieved by 2014/15)

### TARGET

**Nitrogen loss and Nitrogen conversion efficiency performance information reported back to 85% of dairy farms by 30 November 2014; 100% by 30 November 2015\***



NOT YET FULLY ACHIEVED; STILL IN PROGRESS (75% achieved by 2014/15)

\*85% farms were reported back to in February 2016.

## AVERAGE NITROGEN-LOSS BY REGION

Modelling of collected farm information in OVERSEER® was undertaken to provide feedback to farmers on their performance relative to appropriate peer groups. Over time, the dairy industry will generate a comprehensive and robust dataset on nitrogen-loss and nitrogen use efficiency that will be of national significance in managing natural resources.

The OVERSEER® Nutrient Budget model is an agricultural management tool which assists farmers and their advisers to examine nutrient use and movements within a farm to optimise production and environmental outcomes. The computer model calculates and estimates the nutrient flows in a productive farming system and identifies risk for environmental impacts through nutrient loss, including run-off and leaching, and greenhouse gas emissions. For more information on OVERSEER® see [www.overseer.org.nz](http://www.overseer.org.nz).

The national average nitrogen loss, based on 2014/15 data in Table 1, was 39 kg N/ha/yr. With two years of Accord data we are also reporting the rolling average for the two Accord seasons, which is 37 kg N/ha/yr.



**Table 1.** Regional average nitrogen leaching loss (kg N/ha/yr) and sample size across 13 regions (based on 2014/15 season data).

	Average N-loss (kg N/ha/yr)	Sample size (number of farms)	Rolling average (2013/14 and 2014/15 season data)
Northland	22	628	23
Auckland	20	206	22
Waikato	35	2940	34
Bay of Plenty	43	513	40
Gisborne/Hawke's Bay	34	83	41
Taranaki	54	1195	51
Manawatu	29	640	28
Wellington	32	141	32
Tasman	72	94	68
Nelson/Marlborough	42	45	40
Canterbury	52	831	43
Otago	36	272	31
Southland	36	575	38

\*The Westland region had only two farms reported this season so we have not reported the average N loss to protect the anonymity of the farmers' information and because it is a very low sample size.

\*Some of these regions included a few 2013/14 nutrient budgets but the analysis did not change the aggregated regional N loss numbers.

### Variance between regions

The observed variance in N-loss between regions is a function of many factors including soil type, drainage characteristics (including rainfall and/or irrigation) and farming practices for that season.

It is also worth noting that there was a major OVERSEER® upgrade during this last season so all 2014/15 season data was processed through this new version of OVERSEER®. In particular there were changes to the OVERSEER® irrigation module which is why both Canterbury and Otago nitrogen loss numbers increased (both regions have farms which use fresh water irrigation for pasture management).

As a predictive model, OVERSEER® outputs are sensitive to variation in input data and analysis protocols. It would be inappropriate to compare these numbers with other values generated for different purposes, as data input and analysis protocols may differ.

## MANAGING PHOSPHORUS LOSS RISK

Stock exclusion from waterways, ensuring crossings are bridged/culverted, effective riparian management, and good practice effluent management are all important in mitigating phosphorus (P) loss risks on farm. These areas are all covered under separate Accord commitments. Other farm practices that can influence P loss risk include management of tracks and races and wintering practices (including cropping).

DairyNZ is investing in several research programmes that seek to improve environmental performance during the critical winter period such as the Southern Wintering Programme and Good Management Plans (GMPs) delivered through the Sustainable Milk Plan programme.

"Reducing nitrogen loss: A guide to good management practices" provides farmers with guidance on evaluating if the farm system is performing well. It assesses key factors influencing nitrogen loss and describes the likely effects on the farm system if changes are made. It can be found on the DairyNZ website [www.dairynz.co.nz](http://www.dairynz.co.nz).



## CASE STUDY

### New schemes showcase ways to combat nutrient loss

#### Waituna nitrate catcher trials

**Location:** Waituna Lagoon catchment, Southland

**Scheme type:** Nitrate catcher and phosphate filter

The nitrate catcher system treats the nitrate by allowing the tile drain water (an important feature of Waituna's farming landscape) to pass through a wood chip filter where natural bacteria "denitrify" the nitrate to form nitrogen gas, before the water flows from the system to the surface drain. Further treatment of phosphate nutrients will be tested through the installation of a filter containing modified zeolite, a material which readily absorbs phosphate.

For more information visit [www.dairynz.co.nz/waituna](http://www.dairynz.co.nz/waituna)



#### Waikato Wetlands Showcase

**Location:** Lichfield – South Waikato

**Scheme type:** Restored and constructed wetland

Well-constructed wetlands can be highly effective as a means of reducing nitrogen losses, removing 75 percent of nitrate runoff through bacterial activity and plant uptake. Wetlands can also trap sediment and sediment-bound phosphorus and lower faecal bacteria levels, improving the ecological state of the waterways receiving runoff.

While the science behind wetlands is well understood, the recipe to restore and develop them on individual farms in cost-effective ways is not well tested.

Over the next two years this project will showcase the journey of a 1.1 hectare Waikato dairy farm wetland project (0.6 hectare constructed and 0.5 hectare restored area) and build practical advice around design, construction and operation along the way.

To follow its progress visit [www.dairynz.co.nz/wetland-showcase](http://www.dairynz.co.nz/wetland-showcase)





## NUTRIENT MANAGEMENT ADVISER CERTIFICATION

The nutrient management adviser certification hit a major milestone in the 2014/15 year with a total of 100 rural professionals now certified ([www.nmacertification.org.nz](http://www.nmacertification.org.nz)) with significant support from supporting partners Fertiliser Association of New Zealand, Ballance and Ravensdown.

### TARGET

**50% of Fertiliser Association of New Zealand member company nutrient management advisers are certified by 31 May 2014**



ACHIEVED

Ballance work with Fonterra, Open Country, Tatua, Miraka and Synlait to provide nutrient budgeting services to enable them to fulfil their requirements under the Water Accord. They work closely with each of those dairy companies in order to gain alignment and to ensure they are able to meet the required timescales and levels of service provision.



Where requested by dairy companies, Ravensdown has completed production season end nutrient budgets to determine the nitrogen leaching for a farm. This allows for aggregate analysis and trend analysis over time.



## NUTRIENT MANAGEMENT TRAINING

Massey University's Fertiliser and Lime Research Centre runs two Sustainable Nutrient Management (SNM) courses with over 300 rural professionals attending in this last 2014/15 season (221 for the intermediate and 92 for the advanced). The Intermediate SNM course provides participants with a working knowledge of the assessment of nutrient requirements of a range of agricultural systems, including a consideration of best practices for environmental protection. The advanced SNM course provides an advanced knowledge of nutrient cycling and loss pathways in New Zealand's farming systems, allowing people to develop solutions for systems that have unacceptable nutrient loss to the environment.

## FARMER EVENTS AND TRAINING

During the 2014/15 season the dairy industry (along with industry partners) was involved in farmer events across the country where nutrient management was a key topic. Farmers were keen to engage and learn. Attendees totalled 3,220 farmers and 1,574 rural professionals. This is evidence that there is significant interest from farmers and those advising them in improving their knowledge, expertise and skills in environmental management areas.

Event	Number	Farmers attending	Rural Professionals Attending
'More than a Number' farmer workshops (Ballance, Dairy Women's Network, DairyNZ and dairy companies)	13	172	98
'EnviroReady' workshops (DairyNZ)	8	170	115
Policy/Plan change workshops (DairyNZ)	78	2,405	993
Understanding Nutrient Budgets, Nutrient Management Plans and OVERSEER® workshops (DairyNZ)	30	473	368

Sustainable Milk Plans (SMPs) are a key dairy industry tool/process for farmers to assess their farm business with expert advice from trained farm consultants. In this last season 390 farm plans were completed in specific catchments. Nutrient budgets are a key part of the on-farm assessment (Upper Waikato (227), Waipa (10), Rotorua (22), Southland (12), Otago (8), Hurunui (80) and Selwyn (31)). This gives a total to date of 1,034 plans completed.

## NITROGEN REPORTS, WHAT'S HOLDING UP THE PROGRESS?

There are a number of reasons for delays in reaching the nutrient management targets in the Accord.

- There has been a lot of discussion around OVERSEER® (which is the main tool used to calculate N loss numbers). Farmers are regularly getting different numbers from different parties and some are disillusioned with the process.
- Some farmers have questioned the value of the report even when they have contributed to the programme. Those facing nitrogen regulations have a better idea of their value.

### What is being done to address these concerns?

Dairy companies are gathering nitrogen report input information directly from farmers. Staff are also following up with farmers who have not engaged with the programme.

Publicity campaigns to remind farmers to provide dairy companies with this information and stressing its value in helping reduce nitrogen loss from farms and grow grass more effectively are also planned.





# *Effluent Management*

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## **EXPECTATIONS:**

- Dairy farms will comply with regional council effluent management rules and/or resource consent conditions
- Effluent systems installed on dairy farms will be fit for purpose and able to achieve 365-day compliance with applicable rules

## EFFLUENT SYSTEM ASSESSMENT & GUIDANCE

All dairy companies have programmes in place to assess the effluent systems of suppliers on a three-yearly basis, with several companies assessing every farm every year. The programmes are all designed to identify risks of non-compliance with regulatory requirements. All Accord dairy companies have reported on the farms assessed in the three-year period to 31 May 2015.

Of these farms in the 2014/15 season, 459 of the 588 identified as 'at risk' of not being fully compliant now have Effluent Improvement Plans in place. For the remaining 129 farms, the issues were dealt with within 24 hours.

### TARGET

**100% of farms are being assessed  
by 31 May 2014**



ACHIEVED

DairyNZ, along with industry partners (e.g. Institute of Professional Engineers of New Zealand (IPENZ) have developed a suite of standards, guides and tools. The aim is to increase capability within the farm dairy effluent (FDE) industry and providing greater certainty and security for farmers investing in effluent system upgrades. These systems include the FDE Design Standards and Code of Practice (after review Version 3 published in 2015), IPENZ Practice Note 21: FDE Pond Design and Construction (Published 2012) and the Dairy Effluent Storage Calculator (Massey University).

In the last season more specific technical guidance has been provided by the release of DairyNZ 'Effluent Technical Notes' covering energy capture systems from dairy effluent, odour management for storage ponds, dairy effluent treatment systems and pond leakage measurement approaches.

See [www.dairynz.co.nz/environment/effluent](http://www.dairynz.co.nz/environment/effluent) for more details on systems and resources and their promotion.

## ACCREDITATION OF EFFLUENT SYSTEM DESIGNERS

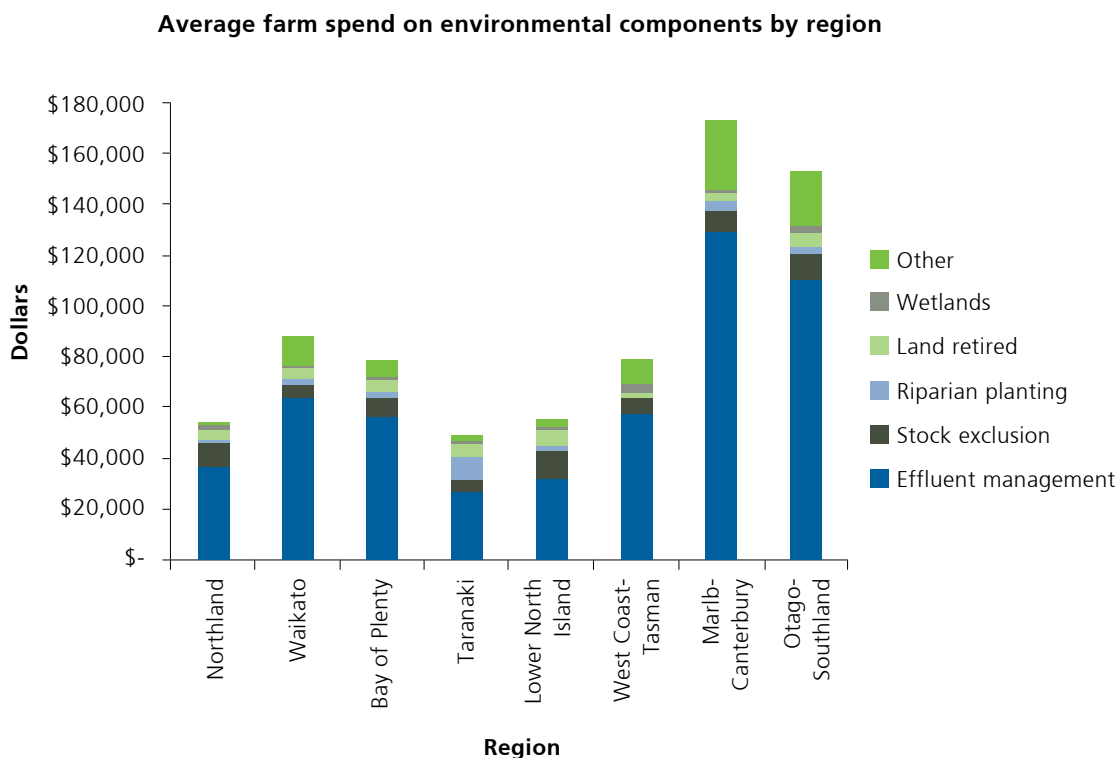
There are currently 21 companies accredited as effluent system designers, with all regions now having access to an accredited company. Interest and awareness of the programme is high, with other stakeholders such as dairy companies and regional councils increasingly recommending accredited companies. The list of accredited companies can be found at [www.effluentaccreditation.co.nz](http://www.effluentaccreditation.co.nz).





## FARMERS' SPEND ON IMPROVED EFFLUENT SYSTEMS

Early in 2015 Federated Farmers and DairyNZ conducted a nationwide survey of dairy farmers to find out what they had spent on environmental initiatives over the last five years. Over one billion dollars has been spent. The majority (70%) of this investment is on effluent system upgrades as shown in figure 1 below. The survey findings demonstrate a significant commitment and investment by dairy farmers into proactive stewardship.



**Figure 1.** Summary of regional farm spend on environmental components

## PROFESSIONAL TRAINING PROVIDED

There are a number of training courses on offer to the effluent services industry and other rural professionals (Table 2). As of 31 May 2015, 716 effluent industry professionals had attended training courses provided by several institutions. That includes the additional 145 professionals this season.

**Table 2.** Training courses on offer to the effluent services industry and other rural professionals.

Training	Date first offered	No of courses run*	Attendees* (Cumulative from course start dates)
Massey Farm Dairy Effluent Systems Design and Management	2011	7	173
NZWETA Pond Design and Construction	2012	17	197
MPTA FDE Hydraulic Design	2012	18	107
QCONZ Dairy Effluent WOF	2014	5	64
Dairy Effluent Storage Calculator Training (run by DairyNZ)	2012	9	175
<b>Total 31 May 2015</b>			<b>716</b>

\*Information provided to DairyNZ from course providers

## ON FARM TRAINING

The Primary ITO (Industry Training Organisation) runs two industry-designed effluent management courses for farm staff (Dealing with Dairy Effluent and Effluent Management Programme). The organisation reports 508 course completions in the 2014/15 year. This is double the number of attendees from the previous year and shows strong support for improved management of effluent systems and on-farm decision making (last season 247 reported attending).

## FIT FOR PURPOSE EFFLUENT SYSTEMS

The Dairy Effluent 'Warrant of Fitness' (WOF) has been developed by DairyNZ as a voluntary programme to help farmers assess if they have a fit for purpose effluent system that can be compliant 365 days a year. The WOF process uses a consistent methodology across the whole country and is available as a commercial service for farmers.



There are currently 20 certified 'WOF' assessors available to run through the assessment with farmers (14 WOF assessors were reported last season).

### TARGET

A farm dairy effluent Warrant of Fitness scheme available as a tool for farmers by 31 May 2014



ACHIEVED

Details on the Warrant of Fitness can be found at [www.effluentwof.co.nz](http://www.effluentwof.co.nz).

### CASE STUDY



#### Farmers fund water testing to find out the problems

Farmers in the Pomahaka River catchment in southwest Otago have teamed up to test water in their catchment to identify why and where water quality problems are occurring.

The catchment covers roughly 2060 square kilometres from its headwaters in the Umbrella Mountains to its junction with the Clutha River. The Pomahaka is a recognised trout fishery and is popular for swimming and kayaking.

Kelso farmer Lloyd McCall says he decided to take action when he found out that the river was under pressure. Eight-five farmers formed the Pomahaka Farmers Water Care Group. Each farmer contributed \$250 to fund water quality testing. He is aiming to get 250 farmers on board.

"We wanted to find out what was causing the problems, so we could help to fix them," says Lloyd.

Industry body DairyNZ is supporting the project by funding agricultural consultants to provide free advice and help 45 dairy farmers in the area develop Sustainable Milk Plans.

DairyNZ water quality specialist Shirley Hayward has reviewed the data collected. She says there are localised issues with priority contaminants such as sediment, phosphorous, and e-coli bacteria. "These can be improved by good riparian management," she says.





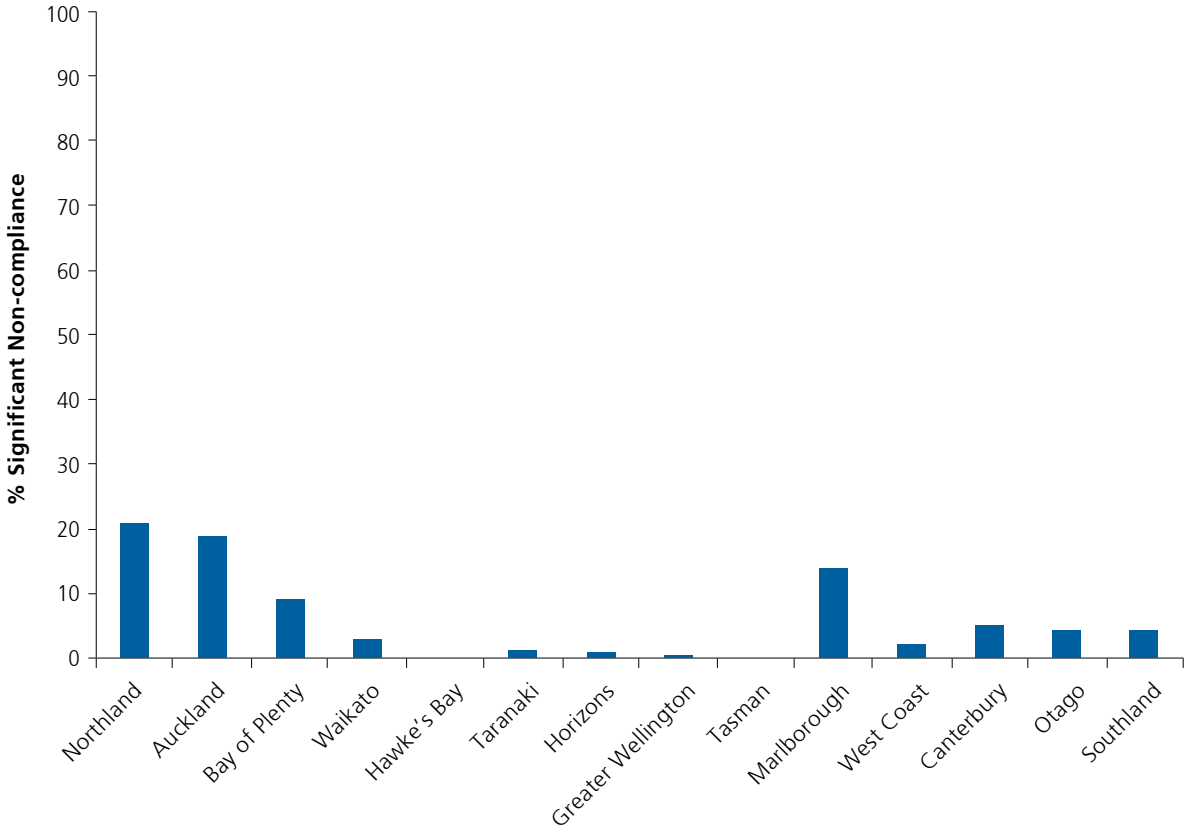
## RATES OF SIGNIFICANT NON-COMPLIANCE

Every regional council undertakes annual monitoring of farm dairy effluent systems and management practices in relation to a range of permitted activity rules and consent conditions.

In the 2014/15 season the rate of significant non-compliance (SNC) on monitored farms at the national scale is 5.8% - the lowest on record (a drop from 7% for last season).

Rates of SNC vary widely between regions as shown in Figure 2. Highest rates of SNC were in Northland (21%) and Auckland (19%) and lowest rates were Hawke’s Bay, Greater Wellington, Horizons and Tasman regions. Marlborough was poorer performing this season for unknown reasons (14% SNC) with 56 farms inspected. There are a range of monitoring approaches across councils. Some councils adopt a targeted monitoring approach, some use random monitoring or monitor all farms and some repeat monitoring of poor performers (as described in Appendix 1). The details in the table in the Appendix have been provided by the regional councils.

This council data set represents more farms than the 11,504 in the Accord programme.



**Figure 2.** Summary of regional council reported rates of significant non-compliance

The main reasons given by councils for SNC included inadequate storage facilities (e.g. ponds with insufficient freeboard or over-flowing), sumps overflowing and excess irrigation leading to ‘ponding’ or small pools of effluent remaining on paddocks. Some councils also cited issues with laneways and races.

**DairyNZ comment:** Most regional councils have moved to standardise their monitoring assessments across the country so comparisons of data are valid.

The dairy industry has made major improvements in effluent management. This has led to a few councils increasingly moving to targeted, high risk monitoring because they know most farmers are doing a good job.

This, in turn however, leads to a focus on farmers who are most likely to have issues on farm. Over time this is likely to distort the data when quoting percentages for significant non-compliance. Measuring compliance effectively and efficiently is an area that needs alignment across all regional councils to ensure useful monitoring of trends at both a national and regional level.

## CASE STUDY



### Sustainable Milk Plans – by the numbers

#### **1,034 Sustainable Milk Plans now developed across the country**

A preliminary analysis of Sustainable Milk Plan actions by farmers in the Upper Waikato area where 650 dairy farmers have been working together to help restore and protect the Waikato River, shows significant reductions in nutrient leaching. On average farmers reduced their nutrient loss by 16% for phosphorus (P) and by 8% for nitrogen (N). Farmers also recorded 1100 actions to improve water use efficiency.

Sustainable Milk Plans offer free, one-on-one advice and support to farms to develop a range of individualised and customised actions including nutrient management, effluent management and water use.

For more information visit [www.dairynz.co.nz/upperwaikato](http://www.dairynz.co.nz/upperwaikato)



## CASE STUDY



### Farmers invest more than \$8m to improve Lake Brunner water quality

West Coast dairy farmers have spent at least \$8 million on conservation efforts to improve the water quality of Lake Brunner.

To date 70 kilometres of the streams flowing into Lake Brunner have been fenced off and 21,000 new plants have been added to banks to help prevent sediment from entering waterways. On top of this, 76 hectares of land has been retired by farmers. With each hectare valued at around \$20,000, this amounts to a significant investment.

The lake, 37 kilometres southeast of Greymouth, is the largest lake on the West Coast and a popular recreation and tourism hub.







# *Water Use Management*

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## **EXPECTATIONS:**

- Dairy sheds will use no more water for wash down and milk cooling than that necessary to produce hygienic and safe milk
- Irrigation systems will be designed and operated to minimise the amount of water needed to meet production objectives

## WATER METERING ON DAIRY FARMS

Over 98% of all dairy farms were assessed for installed water meters in 2014/2015. Dairy companies reported that 3,500 farms (over 30% of total farms) have installed a water meter.

### TARGET

**85% of all dairy farms to install water meters by 2020**



IN PROGRESS  
AND ON TRACK  
(30% farms with  
water meters by  
2014/15)

### CASE STUDY



#### In depth study will help manage water use on dairy farms

DairyNZ is funding a three-year water use study on over 100 dairy farms across the country which aims to identify the seasonal patterns in water use associated with pasture-based dairy farming. It is also looking at estimating water leakages in stock drinking water. The study will also produce a model to predict water use on dairy farms. This study is the first in depth indication of farm dairy water usage on New Zealand dairy farms and the most detailed stock drinking water usage data to date.

The preliminary results from 2014/15 data collected from 47 farms indicate that stock drinking water and farm dairy water use follows a clear seasonal pattern. Stock drinking water increases gradually with the start of cows coming into milk production, reaching its peak in summer. Farm dairy water use climbed sharply at the start of the milking season, and plateaued until the start of summer, where it decreased with decreasing milk production. Stock drinking water was measured - averaging 106 litres/cow/day at peak. Farm dairy water use was on par with current industry figures (70 litres/cow/day).

The preliminary study estimated water leakage (from broken underground pipes, cracked troughs etc) for the first time on pasture based dairy farms. It found it was a large component of the water measured as stock drinking water. Leakage is the highest in winter and early spring, when the weather is wettest. In summer, autumn and late spring leakage decreases.

Modelling results from the study's preliminary data indicate that the main drivers for demand from stock for drinking water were maximum daily temperature and milk production. The main drivers for farm dairy water use were the farm size, milk production, shed size and milking frequency.

Final data and analysis from the DairyNZ water use study will be available by the end of 2016.



## TRAINING, CERTIFICATION AND ACCREDITATION

### IrrigationNZ training and accreditation

IrrigationNZ is a Supporting Partner under the Accord. It co-ordinates training and development activities within the irrigation service sector, with details on its website ([irrigationaccreditation.co.nz](http://irrigationaccreditation.co.nz)).



Irrigation New Zealand held 20 operator training workshops from June 2014 to May 2015 with 296 attendees. Currently two companies are accredited for irrigation design. IrrigationNZ is currently processing a further application and have a number of companies (6) working on applications. Ten people have been certified under the National Certificate in Irrigation System Performance Assessment programme (formerly known as the National Certificate in Irrigation Evaluation).

### DairyNZ training

DairyNZ continues to support and promote the Smart Water Use on Dairy Farms Programme. DairyNZ ran four environmental events for farmers in 2014/15 and included a specific training session on smart water use.

The Smart Water Use resources continue to be updated and requested. Analysis of DairyNZ website statistics show that the Smart Water Use page had 1800 unique page views and 1010 Smart Water Use resource downloads during 2014/15.

Sustainable Milk Plans are a very good way for farmers to plan and implement a range of environmental actions customised to their farms, with every Sustainable Milk Plan having a section on water efficiency. Results from the Upper Waikato Sustainable Milk Project (640 farms covered over three years) show that farmers recorded 1100 actions to improve water use efficiency.







## Building dairy environment leaders – leading through doing



*“ It takes a brave mind, a spirit of innovation and a passion for what you are doing to step up, work with others and lead the industry into the future as dairy farmers who are both responsible and competitive. This combined with purpose and direction will create the accelerated action our industry requires. ”*

*Tracy Brown, chair of the Dairy Environment Leaders' Forum*

More than 3000 dairy farmers attended a series of DairyNZ training events in 2014/15 to increase their awareness of environmental issues affecting the industry.

### Dairy Environment Leaders' Forum – 2015

123 farmers attended the annual Wellington event in 2015 which supports dairy farmers to become environment leaders on their farms, in their communities and for their industry. Sessions were around sustainability, innovation, competitive advantage and leadership. There are now more than 300 farmer leaders networked through the forum.

### Regional training programme

Thirteen Ahead of the Wave workshops were held in Northland, Waikato, Bay of Plenty, Horizons, Canterbury and Southland. The workshops hosted 285 farmers and gave them greater understanding of environmental issues. Topics included how nutrient limits are set, allocation methods, implications of limits and the importance of collective action.

*“ The reality is that environmental impacts and issues vary significantly, both between and within regions. As dairy farmers, we need to be aware of the impacts we have and the best measures to mitigate them. Impacts from farming on irrigated Canterbury gravels are very different to those on rolling clay soils in Northland. ”*

*Conall Buchanan, Waikato dairy farmer and a member of the Dairy Environment Leaders' Forum*







# *Conversions*

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## **EXPECTATIONS:**


- New dairy farms establish and operate using good practice at the outset to minimise potential negative consequences on water values and interests
- New dairy conversions will comply with all relevant regional plan rules and/or hold all necessary resource consents

Dairy companies have recently introduced programmes to assess new conversions. These outline a range of requirements that must be met before milk supply commences. The process would usually include a trained company assessor visiting the farm and running through a check procedure to ensure all requirements are met.

These requirements focus on environmental good practice around effluent, waterways, nutrient management and meeting regulatory requirements. Since 2013, dairy companies identified 175 conversions, with 50 farms measured as complying with these standards.

By 29 February 2016, dairy companies report that of 142 farms, 81% are now fully compliant with the accord requirements.

DairyNZ's *Guide to Responsible Conversions* has been downloaded 360 times in 2014/15. This guidance is available at [www.dairynz.co.nz](http://www.dairynz.co.nz). The guide links farmers and their advisors to a wide range of other useful tools and resources developed by DairyNZ.

<p><b>TARGET</b></p> <p><b>All new dairy farm conversions comply with environmental standards before milk supply commences</b></p>	 <p><b>IN PROGRESS</b> (29% measured as complying with standard by May 2015; 81% by March 2016)</p>
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# Appendix 1: Dairy effluent significant non-compliance data supplied by regional councils and unitary authorities for the 2014-15 season

Region	Total farms	No. of farms monitored	Description of monitoring programme	% significant non-compliance (SNC)	Main reasons for significant non-compliance
<b>Northland</b>	963	963	Non-notified visit to every farm every year. Samples taken of all discharges. All visits done between mid-August and Christmas each year. Follow-up visits to all significant non-compliant farms by appointment. Approximately 710 consented farms and 255 non-consented farms <sup>1</sup> .	21%	<ul style="list-style-type: none"> <li>• Untreated effluent discharges to water (entry/exit races; feedpads; underpasses)</li> <li>• Consented farms – water quality test results outside consent limits</li> <li>• Unauthorised discharges to water of treated effluent on non-consented farms</li> <li>• Inadequate management – e.g. broken pipes, sump overflow</li> <li>• Effluent irrigation – excessive ponding and/or overland flow</li> </ul>
<b>Auckland</b>	286	168	Targeted inspections based on risk – type of discharge (water vs land), compliance history, storage capacity, etc.	19%	<ul style="list-style-type: none"> <li>• Pond overflows and/or suspected seepages</li> <li>• Silage leachate discharges</li> <li>• Sump/stone trap overflows</li> <li>• Effluent discharge from the stormwater diversion pipes</li> <li>• Race ponding and run-off</li> <li>• Discharges from feedpads</li> <li>• Over application from irrigator</li> </ul>
<b>Bay of Plenty</b>	~690	290	Unannounced visits. All sites are inspected between one and three yearly, depending on previous compliance history and type of disposal system.	9%	<ul style="list-style-type: none"> <li>• Pond(s) full - breaching consent free board limit</li> <li>• Ponds overflowing</li> <li>• Effluent irrigation causing bad ponding and /or runoff to water</li> <li>• Effluent observed discharging through the storm water diversion system</li> <li>• No increased storage as required by consent</li> </ul>

<b>Waikato</b>	~4400	453	<sup>2</sup> Continue to target particular areas but give farmers notice of visits. The focus of these visits is to assess infrastructure.	3%	<ul style="list-style-type: none"> <li>• Effluent overflow from sumps</li> <li>• Discharge from effluent holding ponds</li> <li>• Uncontained effluent off race ways and yards</li> <li>• Effluent over application</li> </ul>
<b>Hawke's Bay</b>	82	82	All farms monitored.	0%	N/A
<b>Taranaki</b>	1773	1773	Non-notified inspections. We inspect all farms annually with oxidation pond discharges sampled every second year. Inspection round begins on 1 July and ends on approximately 31 March.	1.5%	<ul style="list-style-type: none"> <li>• Oxidation pond discharges (from sampling)</li> <li>• Unauthorised discharges to water (overland flow from irrigators, holding pond overflows, sump overflows or first oxidation pond overflow.</li> </ul>
<b>Horizons</b>	886	816 <sup>3</sup>	Notified visits to every farm up to 1 week in advance.	1%	<ul style="list-style-type: none"> <li>• Over application of effluent and pond/sump overflows</li> </ul>
<b>Greater Wellington</b>	174	174	All farms monitored. 'Unannounced' visits (no more than 1 hour notice given).	0.6%	<ul style="list-style-type: none"> <li>• Ponding</li> </ul>
<b>Tasman</b>	143	143	All farms inspected re compliance with the Permitted activity rules and/or respective consent conditions. Tasman has five farms that have consent to discharge treated effluent to water. Four of these farms also discharge to land. 24hrs max notice – the farmer is needed on site to answer questions relative to the rules.	0	N/A
<b>Marlborough</b>	57 (40 non-consented, 17 consented)	56 (one farm not operational)	All operating farms monitored. Non-notified visit to every farm. Follow up visits to significant non-compliant farms until they are compliant.	14%	<ul style="list-style-type: none"> <li>• Lack of contingency plan including storage being full or overflowing</li> <li>• Location of storage system within 20m of a waterway without resource consent</li> <li>• Over-irrigation of effluent causing ponding</li> </ul>

Region	Total farms	No. of farms monitored	Description of monitoring programme	% significant non-compliance (SNC)	Main reasons for significant non-compliance
<b>West Coast</b>	391	352 ( 5 not milking and 34 PA farms)	All farms with a discharge to water consent (from treatment ponds) must be visited annually.  Permitted activity farms are visited according to their compliance rating from the last season <sup>4</sup> . Some farms will be rated as high risk and will be monitored more frequently.	2.5%	<ul style="list-style-type: none"> <li>• Sump overflows, unconsented discharges</li> </ul>
<b>Canterbury</b>	1149	976	All dairy farm consents were assessed against five risk criteria. <sup>5</sup> All high and medium risk farms were monitored at least once. Some high risk farms were monitored more than once regardless of whether they were compliant on the first inspection. Some low risk farms were also monitored however low risk farms will not be monitored every year.	5.5%	<ul style="list-style-type: none"> <li>• Ponding or over application of effluent</li> <li>• Storage overflow</li> <li>• Ponding, application depth and water-holding capacity</li> <li>• Storage overflow</li> <li>• Undiluted dairy effluent volume exceeded</li> <li>• Discharged outside of area</li> <li>• Discharge outside of buffer zone distances</li> </ul>
<b>Otago</b>	451	451	All farms field inspected and assessed for compliance with the prohibited rules. All inspections are cold call.	4.4%	<ul style="list-style-type: none"> <li>• Stalled and failed travelling irrigators</li> <li>• Discharges from laneways</li> <li>• Overland flow</li> <li>• Discharges on saturated soils</li> <li>• Overflowing ponds and sumps</li> <li>• Ponding</li> <li>• Discharges to rivers</li> </ul>



<b>Southland</b>	861	861	All dairy farms are consented to discharge effluent to land, the consent contains specific conditions including number of inspections. If a farm has two or more inspections, one inspection will be completed from the air. Number of inspections is decided on matters such as risk to the environment, history etc. Inspections have a notification of approx. 15 minutes	4.5%	<ul style="list-style-type: none"> <li>• Dairy shed effluent entering waterways</li> <li>• Ponding</li> <li>• Overflowing ponds</li> <li>• Poor management practices (applying to saturated soils, applying directly above tile drains or nova flow pipes)</li> <li>• Laneway management</li> </ul>
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<sup>1</sup> Northland's significant non-compliance was 20% for consented farms and 26% for non-consented farms.

<sup>2</sup> Late last year, after a detailed review by a special working party, which included councillors and industry representatives, Waikato Regional Council announced a fresh approach which was judged to be more appropriate in the current climate. Helicopter monitoring is no longer used.

<sup>3</sup> 70 sheds were not inspected this season due to inspection program abandoned because of July flood event (Horizons).

<sup>4</sup> If the farm was non-compliant the year before it will continue to be visited annually (or more often dependent on the issues) until the council is satisfied all the issues that made the farm non-compliant have been addressed. If permitted activity farms are continually compliant then they will only be visited once every two years (West Coast).

<sup>5</sup> Risk criteria: scale – the number of cows or nitrogen loading rate; affected environment – the depth to ground water, topography of the site, presence of waterways, artificial drainage etc; mechanism of damage – the toxicity or persistence of the effluent (this is defaulted to medium for dairy effluent); compliance history – whether there was any previous occurrences of significant non-compliance or enforcement action, quality management – whether they are farming to good management practices or have a Farm Environment Plan (Canterbury).

# Auditor's statement

Telarc SAI Ltd carried out an independent audit of the Sustainable Dairying: Water Accord (SDWA) data collected for the 2014/15 season. The assessment was performed in accordance with the Telarc SAI Ltd standard operational procedures which comply with the requirements of ISO 17021-1:2015.

Telarc SAI Ltd was engaged to perform a review of the systems and practices used for data collection by dairy companies and to perform a check of the reliability of a sample of farm-level information (through on the ground verification of reported information). The assessment programme included review of DairyNZ specific objectives as well their dairy company data consolidation process, data collection processes at five dairy companies and on-farm verification of 77 data sets. The assessments were performed during the period December 2015 to February 2016. During the course of the SDWA audit a number of improvement activities were identified during the assessment process – corrective actions would support further achievement of the SDWA objectives, improve effectiveness of supporting processes and facilitate positive third party verification processes.

The scope of the assessment was focused on data from the 2014/15 season only and the review was performed against expectations and commitments defined in the following standards:

- Both the 2013 and 2015 versions of the Sustainable Dairying: Water Accord.
- Sustainable Dairying: Water Accord Audit standard (DairyNZ requirements) v6 December 2015.
- Sustainable Dairying: Water Accord Audit standard (Dairy Company Requirements) v8 December 2015.

Topics not covered in the assessment include; financial data, case studies and 2016 data.

The assessment confirmed that in general suitable processes have been implemented to guide and enable achievement of SDWA commitments. It was noticed that waterway stock exclusion on a dairy farm is now regarded as a given and a non-negotiable industry requirement. The five dairy companies are to be commended for the significant improvements made in processing of nutrient data and for raising the awareness to reduce effluent discharge to water.

The DairyNZ developed riparian planting and soon to be released recording software as well as in-house initiatives at various dairy companies are positioning the industry for successful achievement of riparian planting objectives defined for 2020 and 2030. Farm visits confirmed significant compliance levels for new dairy conversions – albeit that record retention challenges are being carefully managed. Similarly, evidence confirmed that wetlands on dairy farms visited had adequate stock exclusion. However, integrating Council identified wetlands information with farm level information presents some challenges. The most significant medium term challenge relates to further refining the nutrient management processes to a level of being meaningful. Some challenges were experienced in confirming achievement levels of commitments defined for SDWA Supporting Partners.

Given the scale of reporting (around 11,500 farms), data accuracy was in general at an adequate level. DairyNZ used a structured approach to collect and consolidate dairy company data. During the assessment process DairyNZ was alerted to some improvement opportunities related to farms not included in the report, multi-season data being reported and one data set that should be excluded. Adequate corrective actions have been taken. Data discrepancies at farm level were communicated to dairy companies. Data sets were not adjusted at the time and would not have had a significant impact on the overarching totals reported.

Reports acknowledging improvements made over the past 12 months detailing improvement opportunities and recording performance against the respective audit standards have been compiled and issued to the respective dairy companies and DairyNZ. The findings from these individual reports have been consolidated in an overarching report.

The overarching, industry level report identified three key recommendations:

#### **Recommendation 1:**

In view of wetlands being found to have adequate stock exclusion (as part of the waterway stock exclusion objective), consider re-evaluating the need to link on-farm wetland data to Council identified wetlands. So far this has proven to be challenging, time consuming and creates levels of ambiguity. Additionally it might not add more value in terms of wetland stock exclusion practices.

#### **Recommendation 2:**

SDWA Supporting Partners have specific commitments defined and included in the SDWA. Despite requests by DairyNZ to provide relevant, auditable information there were times when this proved difficult to find and or extract. A case in point identified during the course of the audit were some recent changes in the nature of the relationships with fertiliser companies that has led to variations in the way in which dairy companies were establishing nutrient management processes. This change does highlight the need for the SDWA Supporting Partners to review relevant processes to ensure continued achievement of their SDWA commitments and availability of relevant, auditable data.

Revalidation may include actions such as:

- Reviewing the terms of reference for the association with supporting partners;
- Reconsider the inclusion of commitments in the SDWA from all supporting partners.

#### **Recommendation 3:**

As detailed earlier, varying levels of understanding of the SDWA were identified during the audit resulting in a small number of less than supportive opinions being expressed, and mixed levels of engagement being experienced by the Telarc audit team. Generally speaking the overall levels of support for the SDWA were adequate, but in saying this it is recommended that the DairyNZ data collection programme and third party verification thereof will run more effectively through the implementation of a series of continuous improvement activities. These activities are to be tabled with DairyNZ, DELG and DCANZ. It has been agreed these will be prioritised for ongoing action and deployment to ensure that the assessment of 2015/2016 audit is even more successful than the one just completed.

**To read a full copy of the Auditor's Report for 2014/15, go to [www.dairynz.co.nz/wateraccord](http://www.dairynz.co.nz/wateraccord)**



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*March 2016*



*Dairynz* 

