

NGĀI TAHU Farming

ANNUAL SUSTAINABILITY REPORT

July 2018 - June 2019

Toitū te Marae o Tāne,
Toitū te Marae o Tangaroa,
Toitū te Iwi

When land and water are sustained,
the people will prosper

01

1 Executive Summary	4
---------------------	---

02

2 Introduction	5
----------------	---

03

3 Climate Change	6
3.1 Greenhouse Gas Emissions	7
3.2 Waste Management	9

04

4 Water & Soil Management	10
4.1 Our land and water (OLW)	12
4.2 On-Farm Water Use	12
4.3 Water Quality	13
4.4 Soils	16

05

5 Planting & Biodiversity	18
5.1 Farm planting	18
5.2 Biodiversity	20
5.3 Wetland Restoration and Mahinga Kai	21

06

6 Accreditation and Consent Compliance	22
6.1 FEP Audits and Accreditation	22
6.2 Consent compliance	22
6.3 Initiatives	24

07

7 Conclusion	26
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Executive Summary

01



Kia ora koutou katoa,

Welcome to Ngāi Tahu Farming's first annual Sustainability Report.

As a business with an intergenerational whakataukī and values, environmental sustainability is at the core of everything we do. We are committed to best practice operations and sustainable production from our whenua.

Ngāi Tahu Farming strives to have a positive environmental outcome for both current and future generations. We acknowledge that we are new in our farming enterprises and seek to continuously improve what we do. We will be open and transparent with our progress along the way.

While we recognise that there is still room for improvement, we are proud of what we have achieved so far.

Andrew Priest

Ngāi Tahu Farming Chief Executive

Ngāi Tahu Farming (NTF) owns and operates 45,361 hectares of farmland (excluding forestry) within Te Waipounamu, which consists of high-country stations, beef finishing, dairy and dairy support farms.

NTF understands our responsibilities extend to caring for the lands, plants, animals and waterways impacted by our activities. We believe that when the land and water are sustained the people will prosper.

NTF has identified the following three key goals, which are to be achieved by 2030:



Climate change

Reduce greenhouse gas emission by 29% below 2017 levels



Water & Soils

Good management practices less 15%



Biodiversity

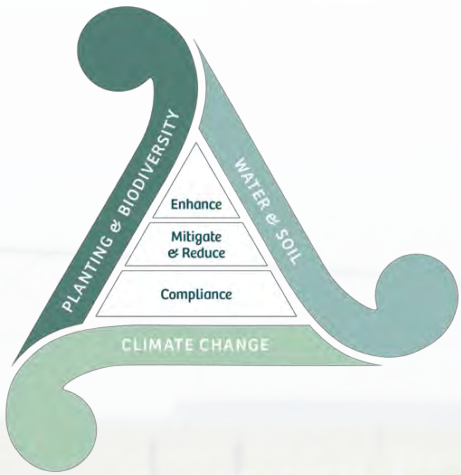
Restore and enhance natural habitats, plant 1.2M trees at Te Whenua Hou (TWH), and restore mahinga kai.

NTF understands the potential adverse environmental impacts of farming and strives to manage and enhance the natural resources to ensure future generations will also prosper. To ensure these goals are met NTF actively manages its impact, seeks out new technology and pushes the boundaries of best practice.

NTF is positively tracking towards meeting the sustainability goals, however it recognises that further changes to current farming practices and adoption of new technologies will be needed to reach these goals by 2030.

With improved technologies and research, it is expected the above goals are achievable. This report provides an overview of how NTF is tracking towards achieving these goals.

Note: This report focuses on the environmental impact of our farming operations. Future reporting will also include an overview of forestry operations, as well as context on social and financial sustainability.



Introduction

02

NTF operates in three locations across Te Waipounamu, covering a total area of 45,361 ha:

Te Whenua Hou (TWH)

Eight dairy, five dairy support, four beef finishing farms and 1200ha of dryland make up TWH. The property is 40km northwest of Christchurch on the northern bank of the Waimakariri river and covers a total area of 6,757 ha. Presently seventeen out of the proposed twenty farms have been converted from forestry to pasture. Irrigation water is sourced from the Waimakariri river via the Waimakariri Irrigation scheme (WIL) and groundwater. Historically it had been populated with Kanuka before being cleared for sheep farming, then becoming an exotic Pinus Radiata forest and most recently irrigated farmland.

Balmoral

Balmoral is located on the northern banks of the Hurunui River in North Canterbury. This property covers a total area of 9,407 ha. To date 1,138ha has been converted from forestry to irrigated pasture with a further 1,380 of dryland and the balance in forestry or cutover. A small 2.5ha trial orchard is also located in part of the dryland area, should this prove successful NTF hopes to expand this to a commercial scale.

High Country Stations

NTF owns three high country stations at the head of Lake Whakatipu in Central Otago. They are Greenstone, Elfin Bay and Routeburn. These properties cover a total area of 29,197 ha and consist of both sheep and beef grazing.

Run as a traditional high-country station this area is considered a taonga asset to the Iwi.

In total NTF manages over 120,000 stock units across multiple properties and land uses. Some significant natural resources border our properties which we are proud to care for.



Sustainable Development Goals





NTF goal - Reduce greenhouse gas (GHG) emissions by 29% below 2017 levels by 2030.



Climate change

03

One of the biggest challenges facing society, as well as the farming sector and NTF is climate change, with the effects of climate change already being felt. It is anticipated that there will be increased variability of weather patterns and extreme weather events, such as longer and more severe droughts, higher average temperatures, reduced average rainfall and increased flooding and erosion. All of which will impact the agricultural sector in Aotearoa.

The International Panel on Climate Change (IPCC) has identified that if the world is to stay within the agreed 'safe' range of a 2°C increase, substantial reductions in GHG emissions are required.



In accordance with the Paris Agreement New Zealand has committed to reducing GHG emissions by 30% below 2005 levels by 2030.

More recently, the Government has recommended amendments to the proposed Climate Change Response (Zero Carbon) Amendment Bill. The purpose of the amendment bill is to provide a framework by which New Zealand can develop and implement clear and stable climate change policies. This will contribute to the global effort under the Paris Agreement to limit the global average temperature to 1.5°C above pre-industrial levels.

The proposed amendment bill intends to implement the following GHG reduction goals:

- Reduce all GHGs (except biogenic methane) to net zero by 2050; and
- Reduce emissions of biogenic methane within the range of 24 – 47% below 2017 levels by 2050 including to 10% below 2017 levels by 2030.

With these goals being set by the Government it is important that NTF are measuring GHG emissions, looking into farming practices and new technologies that will lower emissions.

3.1 GREENHOUSE GAS EMISSIONS

NTF, along with the wider NT group, use Enviromark Solutions to measure and report emissions on a calendar year basis. Since we began measuring our emissions profile in 2016 there has been an increase in GHG from 48,168 tCO₂ to 65,317 tCO₂ in 2018. This increase is due to the expanding nature of the business; that is more developed land under irrigation. Our two biggest sources of (and therefore opportunities to reduce) GHGs are livestock and fertiliser.

3.1.1 Emissions Trading Scheme (ETS)

Agriculture is currently excluded from the ETS; although it is proposed to be included from 2025. This will result in farmers having to pay 5% of its total emissions cost from 2025 with mandatory reporting from 2024. The Interim Climate Change Committee (ICCC) has presented the likely average costs of emissions pricing at farm level, these estimates assume a price of \$25/T of emissions with 95% free allocation. Pricing assumptions that have been released anticipate a tax of \$0.01/kg MS and \$0.01/kg CW. Based on the 2018 emissions profile it is anticipated that NTF would be required to pay approximately \$81,646.

The consultation period for the proposal has closed with the final decision to be announced in 2020.

Total of 65,317 ton CO2e
35% Fertiliser
59% Ruminant livestock

ETS obligation: 5% @ \$25/ton = \$81,646

NTF 2017 emissions profile as measured by Enviromark Solutions – CEMARS certified

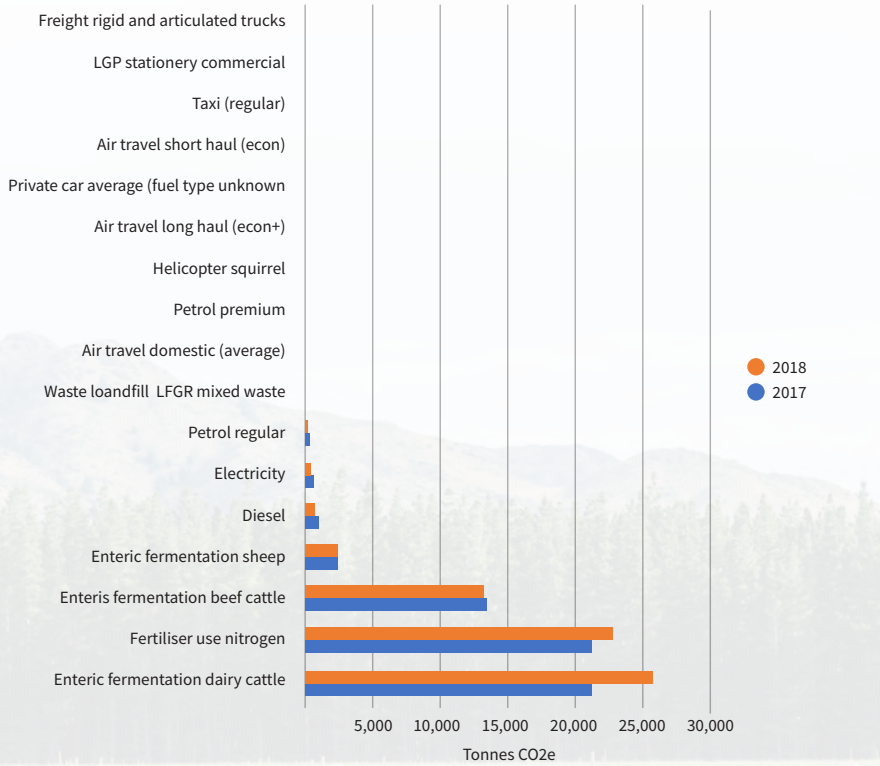


Figure 1: NTF Emissions Profile 2017/18

Synlait dairy farms at TWH average kg CO2/kg MS overall has decreased since 2015 but still remains higher than the Synlait average

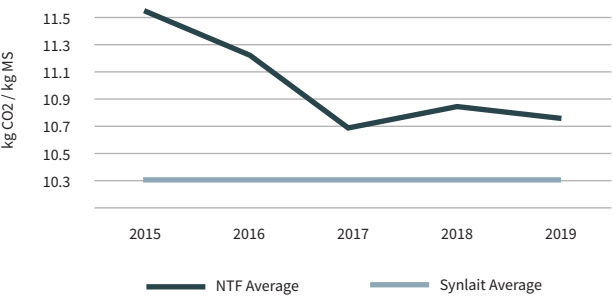


Figure 2: Average kg CO2/kg MS – Dairy at Te Whenua Hou

To reduce GHG on-farm NTF are currently looking into several initiatives. Currently the best option to reduce livestock emissions is to increase animal performance/head. Other technologies are currently being developed which NTF are monitoring. A full table of initiatives is included in section 6.3 of this report.

3.2 WASTE MANAGEMENT

Waste management on-farm is currently largely going to landfill. Envirowaste is contracted to collect on-farm waste from skip bins located across the property, all waste collected goes to landfill. The total volume collected has increased from 37,140 tons in 2017-2018 to 44,325 tons in 2018-2019. Waimak Bins are used for household waste; however, they do not weigh each bin on collection and therefore these volumes are unknown. A recycling collection has been provided in the past however was discontinued due to misuse.

Currently there are initiatives being implemented on-farm to recycle farm waste:

- Plasback collects used silage wrap, feedbags and bailing twine
- Agrecovery collects drums and intermediate bulk containers and agrichemicals
- Scrap metal is collected and recycled
- Needles and syringes are kept in a sharps container and disposed of by the Vet

In the previous financial year approximately 150 spray drums have been collected and recycled, these would have otherwise gone to landfill. We understand more work needs to be undertaken in this area and a review of the current waste management system is being completed. Increasing recycling, composting organics and improving efficiency are key areas of focus. A recent audit indicated we could recycle up to 40%.



Water + Soil Management

04

Water and soils are critical to any farming system and must be carefully managed to ensure any activities have a positive effect on soil fertility and water quality.

NTF are required to operate within the conditions of their resource consents and Environment Canterbury’s Good Management Practices (GMP) which are focused on reducing nitrogen and phosphorus losses from farming operations.

NTF kg N/ha/yr use for TWH and Balmoral is below, showing a downward trend at TWH whilst Balmoral has increased due to conversion from dryland to irrigation.

Annual N fertiliser application at Te Whenua Hou overall has been reducing

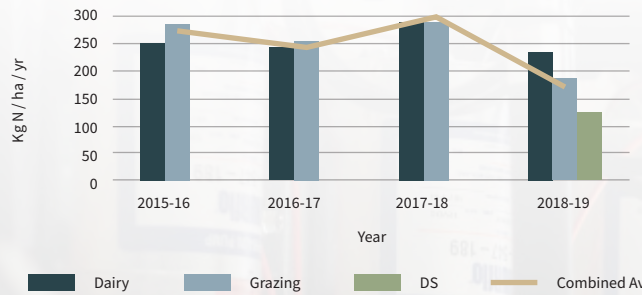


Figure 3: Average annual N fertiliser application – Te Whenua Hou

Currently, the modelled nitrogen losses for both Balmoral and Te Whenua Hou are within consent limits and NTF’s goal. Any future development of these properties will need to consider nitrogen losses and appropriate land uses to ensure that consent limits are met and goals are achieved.

*Note: Overseer FM has been used for the latest modelling calculations.

Annual N fertiliser application has increased at Balmoral due to development of the property

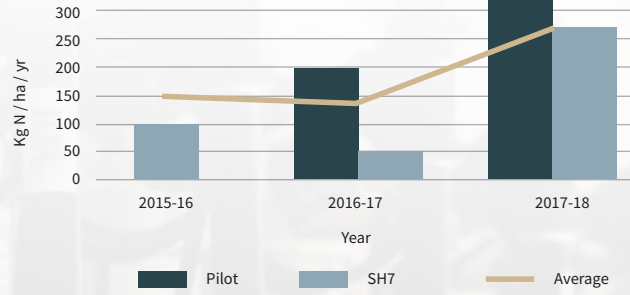


Figure 4: Average annual N fertiliser application – Balmoral



NTF Goal - Good Management Practice less 15% by 2030.

N loss at Balmoral remains within the consented and targeted limits

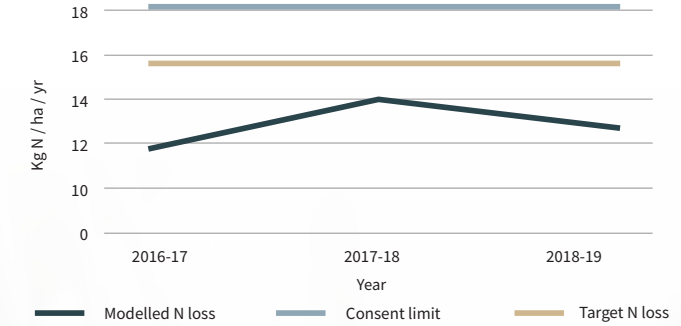


Figure 5: Modelled N loss at Balmoral

In 2014 a Lysimeter was installed on Paritea (Farm 1) at Te Whenua Hou. The Lysimeter is used to monitor the actual movement of nutrients through the soil profile. It has been found that the nitrogen losses modelled by Overseer are much higher than what is being observed by the Lysimeter.

N loss at Te Whenua Hou remains within the consented and targeted limits

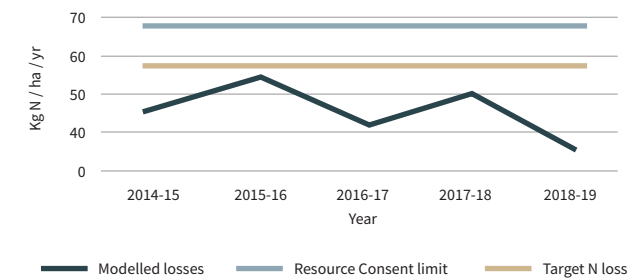


Figure 6: Overseer modelling N loss – Te Whenua Hou

Overseer modelled N loss at Paritea Farm is greater than that recorded by the Lysimeter Losses

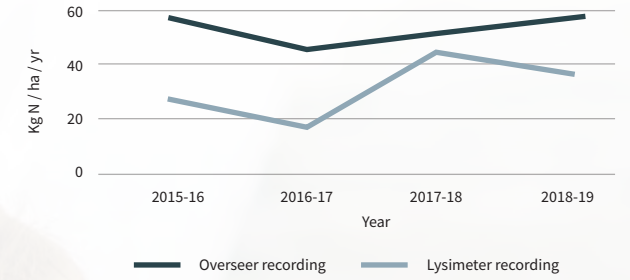


Figure 7: Modelled N loss vs lysimeter recordings at Paritea (Farm 1)



4.1 OUR LAND AND WATER (OLW)

NTF has partnered with AgResearch and Ravensdown as part of Our Land and Water National Science Challenge. This project will focus on improving organic matter within the soils at Te Whenua Hou. Increased organic matter will provide greater fertility, water and nutrient holding capacity (reduced leaching) and overall increased soil health. This is a long-term project expecting to span over 20 – 30 years.

4.2 ON-FARM WATER USE

4.2.1 Surface Water Use

Surface water is consented to be taken for the purpose of on-farm irrigation at both Te Whenua Hou and Balmoral. Efficient use of irrigation water is necessary to not only meet regulatory requirements but also reduce nitrogen losses, operational costs and improve pasture production. NTF uses integrated irrigation management systems, personal experience and observations to ensure that conditions are appropriate to irrigate. Integrated Irrigation Management includes:

- Weather forecasting;
- Daily rainfall;
- Evapotranspiration;
- Soil moisture and temperature monitoring; and
- Variable Rate Irrigation (VRI).

During the 2014-15 season a total of 2,842 ha of farmland was irrigated at Te Whenua Hou which has now increased to a total irrigation area of 4,860 ha. The volumes of water used for irrigation has been trending downwards over time even though the irrigation area has increased.

Actual irrigation water consumption at Te Whenua Hou is well within consented limits

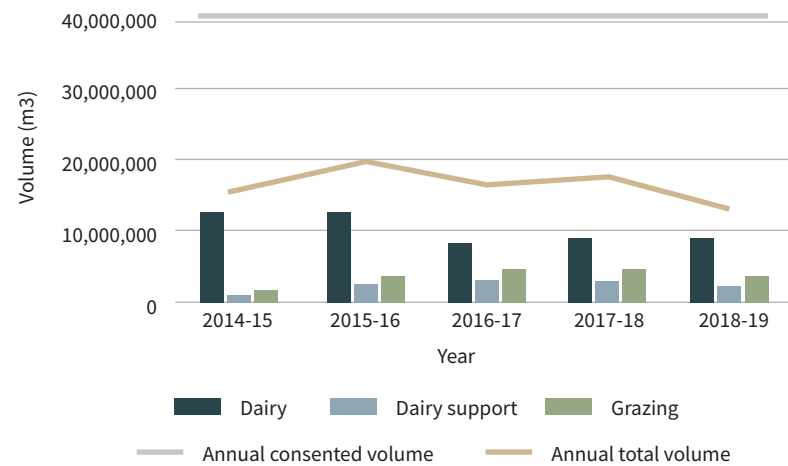
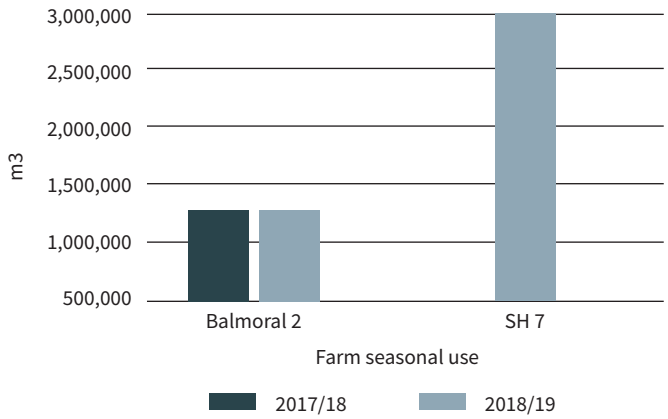


Figure 8: Te Whenua Hou irrigation water use

Figure 9: Balmoral Irrigation Water Use



4.3 WATER QUALITY

4.3.1 Groundwater Quality

NTF undertakes quarterly (February, May, August and November) water monitoring at both Te Whenua Hou and Balmoral with the results being assessed against the Drinking-water Standards for New Zealand.

Te Whenua Hou and Balmoral undertake water monitoring of six dedicated bores installed at various locations across the farming operation, the following findings have been made:

Te Whenua Hou

- Nitrate-Nitrogen levels have remained within the NZ Drinking Water Standard (11.3mg/L) except for a spike in July 2014 and 2016 at MW1 post heavy rainfall
- Ammonia Nitrogen is generally below the detection level (0.010 mg/L), with the highest concentration recorded at MW1 (0.047 mg/L in August 2016)
- pH levels are slightly acidic with values between 4.5 and 7.1
- E.coli has been detected in 4 out of the 6 bores or 15 out of the 111 (14%) of samples to date, with the detection between 1 to 41 MPN/100mL, exceeding the NZ Drinking Water Standard for E.coli of <1 MPN/100mL)

¹ Groundwater quality monitoring is required by resource consent and summarized in the Annual Monitoring Reports prepared by Pattle Delamore Partners Limited (PDP) submitted to Environment Canterbury.

Balmoral

- Nitrate-Nitrogen levels are low and stable (less than 2mg/L) for MW3, MW4, MW5 and MW6. MW1 and MW2 saw a spike in nitrate levels in 2017 sampling although these levels have since been declining. These two bores are located at the down-gradient (eastern) end of Balmoral which started irrigating in November 2017
- Ammonia Nitrogen is generally below the detection limit of 0.010 mg/L in the six bores
- pH levels are slightly acidic with values between 6.1 and 8
- E.coli was detected in samples taken in 2017 post a heavy rainfall, otherwise levels have remained within the NZ Drinking Water Standard (<1 MPN/100mL)

Overall, the groundwater monitoring is mainly consistent with the drinking water standards for New Zealand¹ and shows that the quality is not declining.

Nitrate-N levels in groundwater are well within NZ Drinking Water Standards

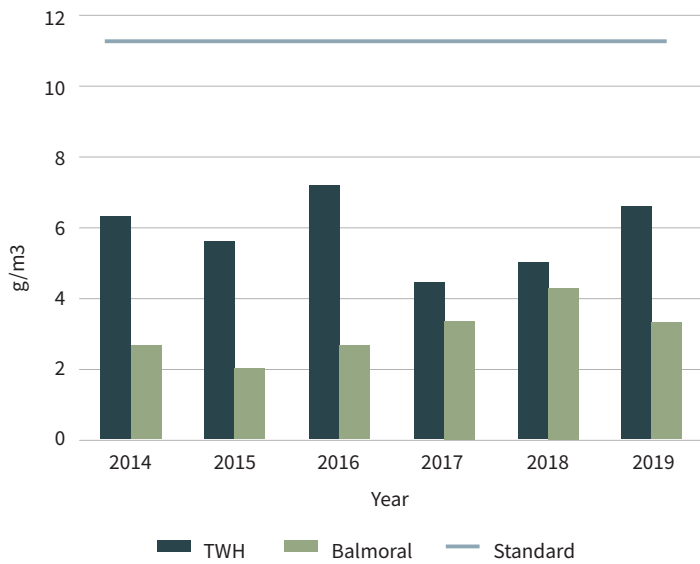


Figure 10: Average N recordings from monitoring wells



Water quality testing, Greenstone River

4.3.2 Surface Water Quality

Surface water quality testing is required by resource consent at Balmoral. NIWA undertake monthly water quality monitoring as part of their National River Water Quality Network (NRWQN) at two sites on the Hurunui River. One is located upstream of the Balmoral property at Mandamus, and the second site is located downstream of the property at SH1 bridge. Monitoring of both sites has occurred since 1989.

Dissolved Reactive Phosphorus (DRP) upstream levels are unenriched (<0.003 mg/L) with downstream levels indicating moderately enriched. However, both sites do not exceed the average annual DRP concentrations of 0.0044 mg/L. These levels have stayed relatively static over the monitoring period with the occasional spike. It should also be noted that there have been other developments within the catchment that would also affect the downstream readings.

Figure 11 below shows that the E.coli levels in the rivers at the three high country stations near Glenorchy are within the swimmable threshold.

High Country Stations water quality within swimmable levels

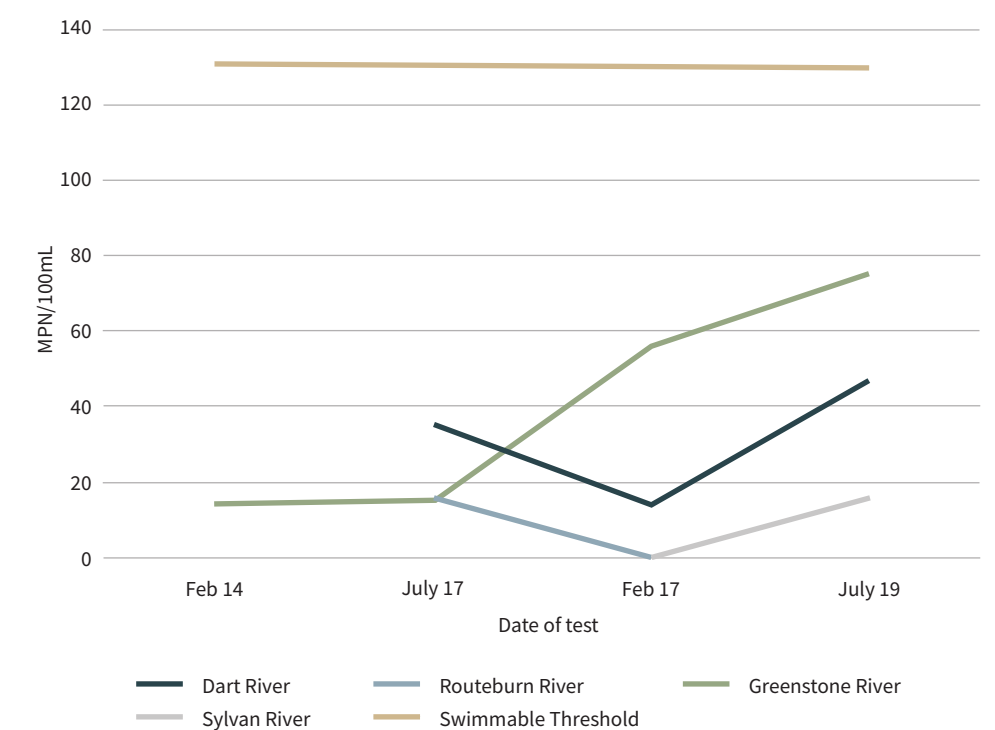


Figure 11: E.coli concentrations in High Country Stations rivers

4.4 SOILS

TWH is located on 65% Lismore silty loams and 35% Balmoral silty loam soils (S-MAP), which are very free draining. The gravels beneath the surface are very consistent which has been confirmed through earthworks during development and EM mapping. Though some areas have varying depths of topsoil the gravels are largely constant beneath the surface.

Like TWH, Balmoral is located on 70% Balmoral silty loams and 30% Lismore silty loam soils (S-MAP), which also makes it very free draining. In contrast to TWH, the gravels below the surface are quite segregated across the property; typically, larger stones are found at the western end and gravels similar to TWH at the eastern end. Though no EM mapping has been completed at Balmoral we know through earthworks during development that large pockets of silts can be found adjacent to pockets of large stones, making for a very inconsistent environment.

On both properties we see higher levels of carbon in the soil following conversion from forestry. To offset the immobilising effect carbon has on nitrogen, NTF has been applying higher levels of nitrogen fertiliser. The carbon to nitrogen (C:N) ratio in the soils is elevated compared to what is considered optimal, however as time passes this is slowly reducing to what we think is a 'normal' level. Little research has been conducted on how long it takes for the effects of carbon to stop having an impact post conversion from forestry to pasture. Previously our consent allowed for an 8-year weighted method which ECAN have recently extended out to 11 years.

CO₂:N ratio in soils is trending downwards positively towards optimal levels at Te Whenua Hou

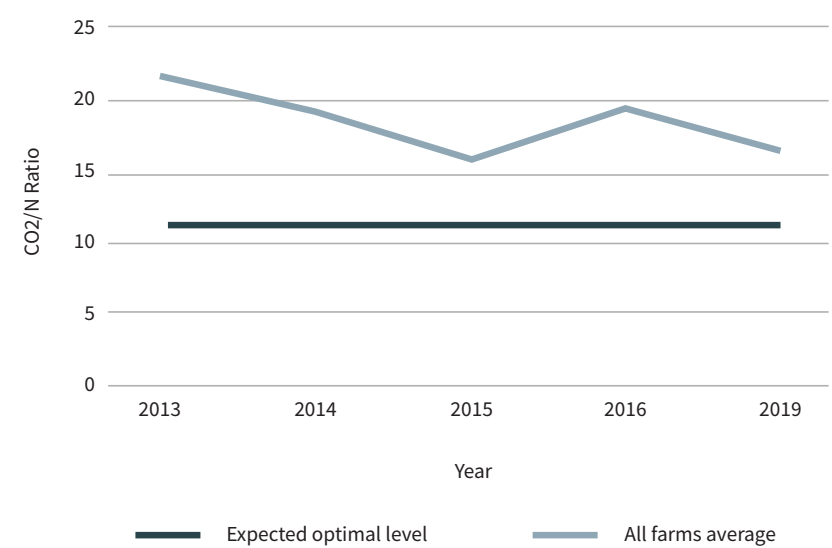


Figure 12: Average carbon : nitrogen ratio across Te Whenua Hou



Planting and Biodiversity

05

5.1 FARM PLANTING

NTF has commenced an extensive planting programme at TWH, we plan to plant 1.2M trees through to 2030. To date approximately 300,000 have been planted, which includes on-farm and reserve areas. A nursery has been established on-farm which has provided greater flexibility in the planting implementation timeframe as well as exposing the seedlings to the climate conditions at Te Whenua Hou prior to being planted.

There have been a few challenges getting the planting programme at Te Whenua Hou established, these being:

- Insufficient water
- Inefficient fencing
- Accidental spraying
- Insufficient root ball at time of planting
- Smothering
- Lack of shelter for small seedlings

A re-assessment of the planting programme is currently being undertaken to try and determine how these challenges can be overcome to reduce plant mortality.

On-farm planting has commenced at Balmoral. The planting required at this property is very extensive with Environment Canterbury requiring the riparian margins to be planted with provisions for public access.

The Government has recently developed the One Billion Trees Programme to increase current rates of tree plantings to reach one billion trees over the next decade. An application for funding has been prepared and submitted for Te Whenua Hou to assist with the proposed planting.

Figure 13: Artist's impression of completed planting at Te Whenua Hou



NTF goal - Restore and enhance natural habitats, mahinga kai opportunities and plant 1.2M trees at Te Whenua Hou (TWH) by 2030.



5.2 BIODIVERSITY

A review of the ecology and restoration works has been completed quarterly by Lincoln University since 2014.

Findings:

- 2018 bird surveys recorded the highest number of native species doubling numbers found prior to conversion (2011);
- The construction of on-farm storage ponds has resulted in a great number of water birds;
- Lizards have been found in the remnant and reserve areas indicating that the population is colonising newly created habitats;
- Increasing number of invertebrates found in the reserve areas, including a number of Carabids;
- To date no Canterbury Beetles (*Holcaspis brevicula*) have been found despite completing over 30,000 trapping days.

Ongoing restoration of native habitats has been identified as crucial for the reintroduction and retention of native biodiversity in these fragmented habitats.



Figure 13: Illustration of Te Whenua Hou providing a bird corridor between the sea and the Alps

5.3 WETLAND RESTORATION AND MAHINGA KAI

TWH is devoid of natural waterways making restoration opportunities very limited. However, an area between Kohakaumu Farm and the Waimakariri River has been identified as a potential wetland restoration site and due diligence with ECAN has begun to restore this area. ECAN mahinga kai staff have visited TWH and are developing workshops to be run with our managers.

By contrast Balmoral has unearthed several wetland restoration options. We are planning to engage with ECAN and Mana whenua on these areas.



Accreditation and Consent Compliance

06

6.1 FEP AUDITS AND ACCREDITATION

NTF are required by resource consent to prepare and update a Farm Environment Plan (FEP). These plans are audited and subsequently graded. All farms at Te Whenua Hou and Balmoral that have completed this audit have received an 'A' grade, which only 5% of all farms audited across the region have achieved. This grade is given when there is a high level of confidence of the farm meeting the objectives for all management areas. Management areas include irrigation, nutrients, soil, effluent, water use and water quality.

Additionally, the dairy farms at Te Whenua Hou that supply Synlait are Gold Plus, except for Kohakaumu which is Gold Elite, accredited under the Lead with Pride programme. The beef grazing unit has recently regained certification from ANZCO for their Farm Assurance programme.

6.2 CONSENT COMPLIANCE

NTF has 100% consent compliance with ECAN, Waimakariri District Council and Hurunui District Council. To ensure on-going consent compliance is achieved an open dialogue has been initiated with ECAN to actively work together on a consent monitoring programme.

Currently there are proposed changes to the Canterbury Land & Water Plan (LWRP) that will affect farming operations in Canterbury. Plan Change 7 (PC7) will affect Te Whenua Hou as further reductions are proposed to nitrogen baseline levels within the Waimakariri Catchment Zone. At this stage it is intended that nitrogen losses are to be reduced by 15% below the N baseline for dairy, and 5% below the N baseline for other consented land uses, by 2030. This incremental reduction is to continue to occur with 15% reduction for dairy and 5% reduction for other consented land uses every 10 years, with the overall target being reached by 2070. The anticipated nitrogen loss reductions in accordance with PC7 for Te Whenua Hou are summarised in Table 1.

Table 1: Te Whenua Hou nitrogen reductions in accordance with proposed PC7




Year	Nitrogen Limit (kg N/ha/yr)
Current (2019)	68
2030	57.8
2040	49.1
2050	41.8
2060	35.5
2070	30.2

The Hurunui and Waiau River Plan (HWRRP) is due to be reviewed in 2022/2023 which may mean changes for Balmoral.



6.3 INITIATIVES

To reach the sustainability goals new initiatives will need to be implemented on-farm. Table 2 below summaries the new initiatives that NTF are currently looking at implementing.

Pou	Goal	Initiative	Status	Likelihood of Implementation
 Climate Change	29% reduction in emissions by 2030	Biofuel	●	High
		Enviro Tab	●	Low
		Fertigation	●	High
		EV adoption	●	Med
		Solar / Renewable Energy	●	High
		Low N Feed	●	Low
		Gas emitting blockers in livestock	●	Low
		Miscanthus	●	Med
		Livestock vaccine	●	Low
		Methane blocking feed additive	●	Low
		Low Methane emitting livestock	●	Low
 Water + Soil Management	GMP - 15% by 2030	Dashboard	●	High
		Wintering barns	●	Med
		Fertigation	●	High
		Alternative effluent systems	●	Med
		Intergrated Irrigation Management	●	High
		Lysimeter / Nitrate Monitoring	●	High
		Diverse Pastures	●	High
		Alternative plant stimulants	●	Med
		Our Land and Water Project	●	High
 Planting + Biodiversity	Restore habitats and Mahinga Kai	Farm plantings	●	High
		Habitat restoration	●	High
		Weed + Pest control	●	High

The greatest challenge for NTF is reducing greenhouse gas emissions. Research and development are continuing at a global scale, but the technologies are some way off being commercially available. Suitability to the New Zealand farming system (green pastures) is one of many challenges.

The main issues that NTF is facing in terms of sustainability initiatives is that technologies are still being developed, and therefore are not currently available. NTF is closely following research and advancements regarding low nitrogen cows, gas emitting blockers in livestock, livestock vaccines and methane blocking feed additives.

Elfin Bay

Conclusion

07

NTF acknowledge the environmental challenges associated with farming and have identified three key areas in which to mitigate and enhance natural resources to ensure future generations have the same opportunities. Overall NTF is proactively working towards achieving the three sustainability goals:

- Due to the growing nature of the business on-farm, GHG emissions have been increasing, although CO₂/kg MS has been reducing at Te Whenua Hou;
- To meet the climate change target NTF is going to have to invest in technology and improve farm practices, this challenge is increased by the availability and suitability of technology;
- It is expected that changing weather patterns will impact productivity;
- Waste management is an area of improvement to focus on;
- Nitrogen losses on-farm are within consent limits and meets Ngāi Tahu Farming's goal;
- Water use for irrigation at Te Whenua Hou has been reducing overtime, and both properties meet consent requirements;
- Groundwater quality at both Te Whenua Hou and Balmoral generally meet the New Zealand Drinking Water Standards and have remained relatively static post land use change;
- Changing legislation concerning climate change and water quality will impact our business;
- An extensive planting programme is underway at Te Whenua Hou to restore and enhance biodiversity on-farm;
- Increasing bird and invertebrate numbers are being recorded;
- All farming operations have a 100% consent compliance record; and
- A number of new initiatives are proposed to assist with the reaching the sustainability goals.

For NTF to reach its sustainability goals the company must continue to invest in technology, improve on farm practices and strive to be at the leading edge of the industry.

Top decile environmental performance

• Climate change

- **Carbon dioxide:** CO₂/kg of milk solids is reducing – 11.6 kg in 2015 to 10.8 kg in 2019.
- **Fertiliser:** amount used (and therefore N₂O emissions) has reduced – circa 350 kg/ha in 2014/15 to 250 kg/ha in 2018/19.
- **Technology:** actively seeking out and trialling new technologies to reduce GHG emissions (fertiligation, biofuel, etc) in line with the Climate Leaders Coalition targets.
- **Sector and iwi leadership:** only farming business in Aotearoa to be a signatory to the Climate Leaders Coalition.



• Water and Soils

- **Nitrate losses:** modelled by Overseer and are reducing – 45 kg N/ha/yr 2014/15 to 35 kg N/ha/yr 2018/19.
 - Our own lysimeter measurements also show a decreasing trend in nitrate losses as well as a significantly lower number overall. We are working with Lincoln University, ECAN and Overseer to get recognition of these results.
- **Irrigation water:** increased efficiency (reducing mm/ha applied) contributes to improved nutrient management.
- **Soil health:** carbon : nitrogen ratio in the soils is improving – 21 down to 15 and expected to get to 11 (Lincoln University "healthy" number for the area).
- **Groundwater quality:** Nitrate Nitrogen levels have reduced since recordings began in 2014 and are below 11.3mg/L (within NZ drinking water standards).
- **Wetlands:** actively identifying and restoring wetlands (with ECAN) on our whenua which is proven to have the benefit of filtering out nutrients.



• Planting and Biodiversity

- **Native trees:** over 300,000 planted to date which is having a positive impact on biodiversity.
- **Birds and invertebrates:** increased numbers have been recorded. Beetle monitoring continues.
- All Farm Environmental Plan independent audits have received an A grade score which only 5% of all farms in the region have.
- 100% consent compliance to date.
- Investment in technology enables measurement of our impact to improve our management – lysimeters, integrated irrigation, fertiligation.



Toitū te Marae o Tāne,
Toitū te Marae o Tangaroa,
Toitū te Iwi

When land and water are sustained,
the people will prosper

