



# **ANNUAL REVIEW**

2015/2016







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## 2015/2016

This is the Annual Review for OSPRI New Zealand Limited (OSPRI).

OSPRI was established on 1 July 2013. It currently manages the National Animal Identification and Tracing (NAIT) programme through its subsidiary National Animal Identification and Tracing (NAIT) Limited and the TBfree New Zealand programmes through its subsidiary TBfree New Zealand Limited (TBfree). Together, OSPRI, NAIT, and TBfree are referred to in this Annual Report as the OSPRI Group.



OSPRI New Zealand's shareholders:

**DairyNZ**

**DEER INDUSTRY**  
NEW ZEALAND

**beef+lamb**  
new zealand

OSPRI New Zealand's Stakeholders' Council comprises representatives from:

Beef + Lamb New Zealand  
Dairy Companies Association of New Zealand  
DairyNZ  
Deer Industry New Zealand  
Federated Farmers Dairy  
Federated Farmers Meat and Fibre  
Local Government New Zealand  
Meat Industry Association New Zealand  
Ministry for Primary Industries  
New Zealand Deer Farmers Association  
New Zealand Stock and Station Agents Association

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**In an otherwise positive year, the tragic loss of a dedicated staff member in an accident on the West Coast was sorely felt by his colleagues and by the close-knit community in which he lived and worked. Barry Petrie's passing only renews our resolve to make the health and safety of OSPRI's people top priority.**

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# CONTENTS

Chairman's & CEO Report	4
Stakeholders' Council Report	6
OSPRI at a Glance	9
Key Highlights	13
OSPRI Programme Updates	15
NAIT Programme	17
TBfree Programme	22
Key Projects	55
Collaborative Initiatives	56
Corporate Activities	58
Financial Statements	62
Director Profiles	96





# CHAIRMAN & CEO REPORT



**Jeff Grant**  
Chairman



**Michelle Edge**  
Chief Executive

It was another successful year for the TBfree programme, with further gains made in our efforts to eradicate TB. We have now cleared TB from 1.5 million hectares out of the 2.5 million targeted for eradication by 2026. At the end of June 2016 infected herd numbers continue to sit at low levels with 43 and we have maintained a period prevalence well below the 0.4% target at 0.09%. We also completed further work to prove eradication is possible by targeting two challenging proof of concept areas – the Hokonui Hills, Hauhungaroa and Rangitoto Ranges. Along with our wider research and development programme this work has been integral to validating the feasibility of the eradication goal under the new TB plan.

During the past year, OSPRI sought to undertake a more collaborative approach in defining its annual activities and work programme which included the development of the Annual Operating Plan for 2015-2016. The AOP outlines the specific priorities, activities and projects we planned to undertake for the financial year and was developed in partnership with our investors and shareholders. The AOP presented key priorities for 2015/16:

- Delivering on NAIT objectives for our stakeholders
- NAIT and TBfree provide value-add for industry
- Continuing the eradication of bovine TB
- Engage our stakeholders and build trust and confidence in our work

A key programme of work for the past year was the review and subsequent approval of the TB plan. This review was undertaken collaboratively, with involvement of Government and industry agencies and other stakeholders with the support of independent Chair and technical and scientific representatives. Highlights of the review included confirmation that TB can, with current methodologies and operational approaches, be eradicated from New Zealand. In accordance with this agreed conclusion, new targets were established that OSPRI as the management agent can work towards over the next 10 years. Alongside, it was recognised that these targets can be achieved with reduced funding and subsequently OSPRI

set about undertaking a significant company re-structure to focus resources in the required areas and ensure efficiency in service delivery for reduced cost. OSPRI's new structure will also see greater focus on engagement with stakeholders including, regional councils, Government, industry agencies, associations and companies and the community. Having worked through these key structural changes, OSPRI is now well placed to deliver the new TB Plan and wider programme of work for the coming year. Work has already commenced towards the development of the approach for implementing the new TB Plan and this will continue over the course of the next 12 months.


For the NAIT program, our primary focus has been on improving industry and supply chain uptake. Central to this has been training and extension activities to engage with primary sector representatives. We also sought to develop and enhance the NAIT system in areas as required by NAIT users, industry and Government.

In what is an encouraging development for OSPRI, we have been working with Government and key primary industry players to develop an online and mobile tool that captures key information about livestock status and movements as they move through the supply chain. This project looks to build on the Animal Status Declaration (ASD) form currently required when animals are moved from a property and when they are received. This is an important project that highlights how OSPRI can add further value to industry and our shareholders.

A number of challenges and opportunities present themselves this coming year. Mainly, these relate to ensuring OSPRI continues to deliver its core business. In addition, OSPRI will build its Strategic Plan in consultation with shareholders and stakeholders and revise its industry consultation arrangements while maintaining a focus on regional delivery.

In relation to the TBfree programme, specific challenges will include developing the National Operating Plan and suite of policies that will enact the new TB Plan. Further key activities will include forming the new consultation and engagement strategy, re-zoning New Zealand in accordance with TB management areas that our operations for eradication will target, and planning the sequence of operations that will enable the intended eradication targets to be met. In terms of NAIT, the focus remains on supporting the NAIT review, refining the NAIT performance targets and implementing an enhanced reporting platform to ensure its delivery for Government and industry.

We look forward to working with our shareholders, farmers and wider industry partners to tackle these challenges.



**Jeff Grant**  
Chairman



**Michelle Edge**  
Chief Executive

# STAKEHOLDERS' COUNCIL REPORT



**Anders Crofoot**  
Chair, Stakeholders' Council

The Stakeholders' Council (Council) provides a key advisory role to support the strategic direction and delivery of OSPRI programmes and for the selection and appointment of Directors on the OSPRI Board.

This past year has focussed on establishing the new TB Plan with both its reduced funding and new goals relating to TB eradication.

The Council has been pleased to see further progress towards the eradication of bovine tuberculosis. The benefits for farmers include seeing large areas of New Zealand cleared of TB, infected herd numbers steadily reducing, livestock testing requirements reducing and movement restrictions changing as a consequence.

It is most pleasing that this progress is being made while at the same time overall expenditure has been reduced.

The Council held two meetings in October 2015 and April 2016 with total expenditure incurred of \$2,600. The Council was also involved in director candidate selection for the OSPRI Board in 2015.

In an economic environment requiring improved efficiencies in the face of constantly increasing costs, the progress in TB management is heartening.

Likewise, a streamlined OSPRI is making good progress towards operational improvements and the ongoing adoption of technical solutions that deliver the benefits of smarter farming practices.

The beginning of the review of the NAIT programme will see the value of NAIT to New Zealand's rural sector being realised.

The Council has appreciated the efforts of the Board in facing the challenge of restructuring OSPRI's operations and positioning the company to remain agile and responsive to the opportunities ahead.

A handwritten signature in dark ink, reading 'Anders Crofoot'.

**Anders Crofoot**  
Chair, Stakeholders' Council



# STAKEHOLDER CONSULTATION

There are several core consultation arrangements that support OSPRI with input and advice towards its programme activities and investments.

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First, OSPRI engages its shareholders and investors, DairyNZ, Beef + Lamb NZ, Deer Industry NZ and the Ministry of Primary Industries (MPI) in dedicated discussions to help plan activities and ensure support for annual budgets.

In addition, to gain agreement towards activities concerning the development, delivery and implementation of both NAIT and TBfree, OSPRI management and the Board of Directors engage with the OSPRI Stakeholders' Council for advisory purposes. The Stakeholders' Council comprises representatives from across the livestock supply chain that are nominated by shareholder and stakeholder agencies with the role and responsibility of providing dedicated advice on OSPRI's activities and programmes.

Second, OSPRI seeks advice, input, industry and practice information from its TBfree Committees and OSPRI Committees, established for advisory purposes but with dedicated membership at a more local level within the farming community.

Third, OSPRI engages with MPI to ensure effective underpinning of the Biosecurity

and NAIT Acts and to ensure appropriate policy development and implementation activities are undertaken in a timely manner. Accordingly, OSPRI meets with MPI on a regular basis for strategic planning and information sharing purposes, alongside a range of ongoing engagements directed at formalising agreements and reporting by OSPRI as the management agent for TBfree and NAIT on behalf of Government.

OSPRI also seeks to undertake regular evaluations of its programmes and outputs, including independent reviews. In terms of the TBfree programme, this has occurred through the scientific reviews of the TBfree programme. In terms of corporate activities, this occurs in a range of areas including, but not restricted to Health and Safety (Deloitte, 2016), Procurement (Deloitte, 2015), and across a range of internal and external audit and assurance activities.

For NAIT, independent evaluations are now being undertaken in context of the NAIT review. Prior to this, internal evaluation, usability studies, surveys of industry and field experimental work have informed the development of NAIT over time. The objective of the proposed NAIT review is to evaluate the performance of the current NAIT system against its stated aims, commencing with independent programme level (operational) evaluation, a review of the incentives and drivers of the NAIT scheme and an International Comparison of livestock (cattle) RFID systems.





# OSPRI AT A GLANCE

Effective animal health management and surveillance and the control of animal diseases and pests that threaten biosecurity and the natural environment in New Zealand relies on the co-operation of government agencies, industry organisations and businesses, communities and individuals in the primary sector.

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The Ministry for Primary Industries (MPI) is tasked with maximising export opportunities, improving agricultural productivity, ensuring the food we produce is safe, increasing sustainable resource use and protecting New Zealand from biological risks. Accordingly, the Ministry advises on animal health policy including animal disease surveillance and control, emergency preparedness and response, chemical residues, livestock identification and animal welfare.

In support of these initiatives, the Government and industry partner and co-invest in two major programmes: TBfree (the management of the National Bovine Tuberculosis Pest Management Plan) and NAIT (the National Animal Identification and Tracing programme).

OSPRI is the management agency appointed for the implementation of the TBfree and NAIT programmes. OSPRI has capability in areas of biosecurity, animal health, traceability and pest management. OSPRI represents a partnership between industry and government, where these agencies co-invest and collaborate for the delivery of the TBfree and NAIT programmes. OSPRI also plays a key role in developing policy and technical guidelines; providing system and database support and management; undertaking animal health monitoring and surveillance; delivering operational pest management; and implementing extension and community engagement programmes.

## OUR CORE PROGRAMMES



OSPRI's National Animal Identification and Tracing (NAIT) programme links people, property and livestock in New Zealand through a traceability system.

NAIT was established as an industry-led initiative to improve New Zealand's animal tracing ability and to develop a national system for delivering traceability. Under the scheme, cattle and deer are traced using NAIT approved radio frequency identification device (RFID) ear tags. Once tagged, animals are registered in a national database.

The details recorded include:

- the animal's location
- movements in the animal's life, and
- contact details for the person in charge of that animal.

NAIT has been in a three year transition phase of implementation, with increasingly good results in terms of uptake by participating industries.



The TBfree programme aims to control bovine TB in New Zealand's cattle and deer herds. Bovine TB is an infectious disease spread by close contact between animals. TB can cause production loss and animal health issues in farmed cattle and deer.

In New Zealand, possums also carry and spread TB, requiring extensive pest control as part of the TBfree programme.

TBfree, managed by OSPRI, is responsible for the implementing the National Pest Management Plan (NPMP) for bovine TB.

The current NPMP seeks to:

- eradicate TB from large areas of land across New Zealand by 2026
- keep infected herd numbers as low as possible, and
- prove that TB eradication is possible in challenging areas (what is called "proof of concept").

## GOVERNANCE

OSPRI New Zealand Ltd (OSPRI) as a parent company was incorporated on 6 June 2013 by the acquisition of Animal Health Board Incorporated (now TBfree Limited) and National Animal Identification and Tracing Limited (NAIT).

OSPRI recognises the value of strong corporate governance. As a company responsible for the investment of funds by its shareholders and the Crown, OSPRI must meet and demonstrate sound governance processes to shareholders and stakeholders.

OSPRI's shareholders are DairyNZ Limited, Beef + Lamb New Zealand Limited and Deer Industry New Zealand Limited. OSPRI has a Stakeholder Council comprising representatives of the Shareholders and Ministry for Primary Industries and seven other interested stakeholder groups which include the New Zealand Deer Farmers Association, Local Government New Zealand, New Zealand Stock and Station Agents Association, Federated Farmers Dairy, Federated Farmers Meat and Fibre, Meat Industry Association New Zealand and the Dairy Companies Association of New Zealand.



**TABLE 1:** Outline of OSPRI's governance framework.

GOVERNANCE ELEMENT	REQUIREMENT TO BE ADDRESSED BY OSPRI GROUP
<b>Enabling Legislation</b>	TBfree New Zealand Limited (TBfree) manages the National Pest Management Plan (NPMP) for bovine tuberculosis (TB) as Pest Management Agent, in accordance with the provisions of the Biosecurity Act 1993 and the Biosecurity (National Bovine Tuberculosis Pest Management Plan) Order 1998 – reprint 2013  NAIT Limited is responsible for implementing New Zealand's National Animal Identification and Tracing (NAIT) programme and operates under the National Animal Identification and Tracing Act 2012 as the NAIT Organisation.
<b>Governance Legislation</b>	OSPRI, TBfree and NAIT are provided for with separate constitutional requirements and recognised under the Companies Act 1993 and the Charities Act 2005. The Shareholders engage with OSPRI through a formal Shareholder Agreement and through the constitutional consultation mechanism of the Stakeholder Council which operates in accordance with agreed stated rules.
<b>Financial Control</b>	The OSPRI Group maintains accounts and records of transactions and affairs in accordance with New Zealand's accepted accounting practices for large companies (NZGAAP). OSPRI and its subsidiaries are each not-for-profit public entities.
<b>Audit Process</b>	Independent internal and external audits are applied to the OSPRI group to review and assess financials, risk, fraud, quality of internal financial and governance processes and policies.
<b>Fraud and Risk Management</b>	The OSPRI Group's fraud and risk management framework through the company's Audit and Risk Committee includes processes for project, programme and portfolio level risk management, general compliance and operational risk management and financial risk management.
<b>Monitoring Performance</b>	The OSPRI Group monitors, measures and evaluates its performance to continually improve its effectiveness and efficiency. These measures are reported to Stakeholders on a regular basis.
<b>Reporting to Stakeholders</b>	The OSPRI Group reports to Stakeholders on an annual and a quarterly basis and more regularly through their technical advisory groups, the regional TBfree and national OSPRI Committees. Specific reports to Shareholders and the Ministry for Primary Industries are made in accordance with OSPRI's regulatory requirements and deliverables.
<b>Planning and reporting</b>	The OSPRI Group's corporate planning and reporting approach includes an Annual Operating Plan that outlines the annual budget, workplans, resources and research requirements for the year. This provides the opportunity for the Stakeholders' Council and Shareholders to respond to changing strategic requirements and external drivers for the company Annual Report that provides information on the projects and activities of the OSPRI Group in relation to the goals set in the Annual Operational Plan for a given financial year.





## KEY HIGHLIGHTS

NUMBER OF ANIMALS REGISTERED IN NAIT

**11 Million**

HECTARES COVERED BY PEST CONTROL ACTIVITIES

**5,883,107**

HECTARES OF MOVEMENT  
CONTROL AREAS REDUCED

**2.18 Million**

HECTARES DECLARED FREE OF TB  
SINCE 2011 (2.5M TARGET BY 2026)

**1.6 Million**

NUMBER OF INFECTED  
HERDS AS AT 30 JUNE 2016

**43**

FARMERS ACTIVELY USING NAIT

**85,000**

**400** CONTRACTORS SPENT  
ALMOST **410,000** HOURS  
SETTING AND INSPECTING  
MORE THAN **420,000** TRAPS  
AND DETECTION DEVICES





# **OSPRI** PROGRAMME UPDATES

OSPRI's core programmes, NAIT and TBfree underpin the Company's mission statement by delivering upon livestock traceability, TB disease management and wildlife/pest management for enhanced biosecurity and biodiversity outcomes.



# THE NAIT PROGRAMME

The objective of the NAIT programme is to protect and enhance New Zealand's reputation for producing and exporting quality primary produce by underpinning product integrity and food safety.

To achieve this, NAIT links people, property and livestock to provide animal traceability across the supply chain from the farm through to the point of slaughter.

The NAIT system, by providing the mechanism for lifetime livestock traceability, seeks to enhance New Zealand's biosecurity and emergency animal disease response capability and safeguard the New Zealand economy. OSPRI's focus is therefore on ensuring that NAIT delivers its agreed aims, including the need to enhance overall industry uptake, improving system usability and continue to support and maintain the integrity of traceability data.

To address these challenges, during the past year we focused on three areas:

- creating awareness of the benefits of NAIT;
- understanding barriers to farmer uptake; and
- strengthening NAIT delivery industry partnerships.

Outlined below is a summary of key highlights and activities undertaken throughout the year.

## Supporting farmers

As at the end of June 2016 there were around 85,000 farmers actively using the NAIT system and 11 million livestock were registered. OSPRI's contact centre plays an important role in supporting farmers when they join NAIT or have questions about their account or registering animal movements.

OSPRI's contact centre managed 200,000 calls in the year, half of which were NAIT-related. Our highly trained staff assisted with queries on any aspect of NAIT and helped support farmers on how to use NAIT and meet their NAIT requirements. As part of these interactions we focused on reinforcing the key requirements to tag and register animals and record farm-to-farm movements. We also focused on emphasising the various benefits of NAIT to farmers, industries and New Zealand. This included developing industry focussed case studies relating to the benefits gained from livestock traceability. The top reasons for the calls to the Contact Centre included cattle Eligible Animal Questionnaires (EAQ), NAIT enquiries for transaction and account maintenance, truck audits and cattle blood results.

During the year outbound contact centre emails sent for both the TBfree and NAIT programmes totalled just over 20,000.

Feedback from farmers indicates an increasing appreciation of the functionality of the NAIT system. The major issues filtering through remain to be tag retention, managing issues and movements made by information providers, general functionality and familiarity with the system, and the reconciliation of tags with movements relating to either farm to farm or farm to processing works. The feedback about the service provided by the contact centre continues to be very positive.

## NAIT system developments

Since the NAIT system went live in July 2012 significant improvements have been made to ensure that the system is robust and usable. A NAIT enhancement project was developed in 2012 and continued for three years to focus on improving the system in relation to farmer feedback. The focus of the project was to complete delivery of a range of enhancements with appropriate policy assessment, focus group testing and implementation communication.



Last year's enhancements addressed a wide range of areas. These included: the insertion of country of origin for export and birth details; the ability to send animal import details to the meat processor; the completion of phone number contact fields to allow multiple numbers; the restriction of information provider access to their contractual relationship with the persons in charge of animals (PICA); the reduction of unnecessary movement data and duplicate data; the establishment of notifications to PICA delegates; the export of untagged kill data; the development of the animal auto registered notification mechanism; and the development of the animal residency declaration report for Government.

During the year we made a number of small but important changes to the system with the focus on improving data integrity and implementing legislative and regulatory requirements. While these changes have contributed to its current solid state, there are still areas that can be enhanced. However, these will be informed by the current NAIT review project which is directed at evaluating the system's implementation to-date in relation to its stated aims at the point of development.

### **Improving data integrity**

We took measures to ensure high quality data entered NAIT and regularly reviewed the quality and usability of data extracted from the system. A key achievement included updating tag related information, with approximately 15 million tag product details updated in collaboration with tag manufacturers. In addition, as part of our work to prepare for the new differential slaughter levy (see page 55 for more details) we updated the production types of 8 million animals alongside 12 million unused tags and assigned 70,531 NAIT Numbers with a primary production type.

### **System usability**

Another key project involved enhancement of privacy and security associated with account holders and ensuring appropriate authority was demonstrated by information providers on behalf of their PICA members. OSPRI partners with a range of accredited information providers and commercial entities that, on behalf of their membership and supplier base, are responsible for managing and entering information into the NAIT system. Currently there are 128 accredited information providers and OSPRI continues to work closely with them to ensure a high standard of data timeliness, accuracy, reporting and verification.

Farmer usability was examined through analysis of Contact Centre calls received (feedback). This process identified the key issues impacting users. These included tag retention, the need for two legged movement transactions, the ability for grouping animals, double tagging and the use of visual identifiers, and impractical to tag policies. Overall, feedback from 262 individual users was scoped in the process. Google analytics were also reviewed to examine the use of key functions in the NAIT system. Alongside, development of a focus group that would support a user evaluation survey was scoped, however, this was held for the NAIT review process where it was recognised that engagement with technical users would be occurring as part of the evaluation process undertaken for the review. Upon completion of the review and therefore agreement on the key aspects for future consideration on behalf of NAIT users, it is envisaged that strategies to address the key aspects sought for improvement will be determined and a development and extension programme established for implementation.

## Assessing data collection and validation for large herds

Ensuring the information we hold in our systems is up to date is critical to managing both the NAIT and TBfree programmes. Focusing on larger herds, we carried out a review to check the consistency of data we collect for NAIT and our TB testing work.

The main outcome of this work was confirmation that many farmers were tagging their animals but that they had failed to register them in the NAIT system. This was evident by an inconsistency between TB testing results and registered animals, with a large number of apparently 'unused tags' in the account. This information has allowed OSPRI to better focus resource and to work with industry groups to ensure our stakeholders understand their obligations and requirements.

## Winter dairy grazing evaluation

With large numbers of stock moving during the winter grazing period, we carried out a project to investigate farmer behaviour when completing and recording animal movements to other farms and grazing blocks. The objective was to determine whether movements were being created as required during the grazing period.

As part of the study we spoke to dairy farmers that recorded no animal movements from the end of April through to the start of June to locations other than direct consignment between slaughter or sale yards. Many farmers who did not indicate any stock movement (apart from movement to slaughter) during this period were contacted and their stock movements analysed.

It was identified that many farmers owned/leased their own support farm within a 20km radius, therefore did not need to complete a movement notification due to the properties being managed under one NAIT number. For others it allowed farmer education on what is needed to comply when they do move their stock to other locations for winter grazing.

## NAIT policy and standard development

Developing best practice policy processes was a key focus throughout the year. This included refinement of OSPRI's approaches for scoping and evaluating key policies and regulations. It also involved enhancing regular engagement and communication processes with Government and industry and developing agreed approaches for consultation with stakeholders in relation to policy changes. The NAIT notice programme was scoped and an example developed and implemented for the Impractical to Tag policy implementation. It is anticipated further work will occur to develop the NAIT notice programme in accordance with the NAIT review.

### Developments relating to the NAIT Act

The Impractical to Tag (ITT) regime was intended to address transition animals for the first three years of NAIT's implementation and the regulations were due to sunset in June 2016. In November 2015, OSPRI, in collaboration with the Ministry for Primary Industries (MPI), conducted public consultation to obtain feedback on the future application of ITT levies under the NAIT Act. The consultation confirmed that an ITT regime would still be required to operate under the NAIT Act, alongside a minimal increase to the levy was proposed to reflect a small increase in operational costs. The resultant regulatory amendments have been gazetted by MPI taking effect on 1 July 2016 which effectively extend the ITT levy for a further three years and applies a maximum levy rate permissible under Regulation remaining at \$18.77 per ITT animal.

For the first three years of the NAIT scheme (from March 2013), there has been a transition period exempting tagging deer that were born before the scheme was mandatory (unless they were moving off-farm). The transition period for deer ended on 29 February 2016 (cattle finished the designated three year transition period on 30 June 2015).

### NAIT device and accreditation standards

During the year an evaluation of the current NAIT device and accreditation standards was undertaken. As a result a revised version was developed for purposes of consultation with tag manufacturers. It is anticipated this consultation will occur during 2017. This will be done in conjunction with the review of device accreditation broadly and the assignment of key performance indicators that reflect that latest developments of the International Committee for Animal Recording, international standards for animal identification, importing country requirements and new and emerging RFID technology developments.

### NAIT Extension activities

A series of extension and engagement activities was conducted to support awareness and uptake of the NAIT programme throughout the year.

#### NAIT Workshops

OSPRI delivered NAIT 101 training workshops in November and December. The purpose of the workshops was to provide farmers with relevant and up to date training where they had the opportunity to:

- Understand the NAIT system and requirements
- Learn how to register an animal and record animal movements
- Learn how to deal with replacement tags and updating an animal's details.

Five workshops were held in the South Island and seven in the North including one in Rotorua, specifically tailored to deer farmers in the area. Participants at the workshops provided feedback on ways to improve the NAIT workshops and OSPRI is conducting post-workshop evaluation to ensure feedback is captured and that learnings have been implemented.

### NAIT Breakfast event

A NAIT Breakfast extension meeting was held in Hamilton in March involving industry representatives as well as farmers. Around 50 farmers attended along with 20 industry representatives. Contact Centre staff attended to provide advice on the NAIT and TBfree programmes. Overall stakeholder feedback was very positive with 100% of attendees advising they would recommend the event to others. This is something OSPRI will seek to build on as part of our wider extension work.

### NAIT marketing and promotion activities

OSPRI's second NAIT nudge campaign targeted 2.6 million unused tags across 5000 PICAs. 478,000 tags were used or updated during the campaign period (either manually registered, auto-registered, deleted, damaged or lost) and nearly 350,000 of these tags were manually registered (the desired action from the NAIT nudge). This was a 350% increase of tags manually registered for targeted PICAs compared with 2014. Direct mail campaigns on targeted issues and measures of behaviour change were applied.

The direct mail campaigns were applied to issues including, but not restricted to, the tagging of weaners pre-sale or movement, the tagging of dairy calves prior to weaner fairs/sales, tags purchased but not activated on animal, PICAs registered but no activity in account and for encouraging record of dairy grazing movements.

For the deer industry, OSPRI delivered a NAIT nudge (email and mail) campaign during February 2016, with a focus on registering unused tags. As a result, 86,000 tags were used/updated during the campaign period and 50,000 of these were manually registered during the campaign period which was the aim of the initiative.





# NAIT NUDGE

HCR026 2  
Mr AB Sample  
123 Sample Street  
Sampleton 9999



NAIT is an OSPRI programme




Top Tip Tuesday: Tag, register and record your cattle and deer on NAIT. Find out how here: <http://goo.gl/yBw6v>



# HELLO


It looks like you have a lot of NAIT tags in your account that haven't been registered to any animals yet. Can we help?


Registering your animals is a crucial step as it activates the animal's tag in the NAIT system. This distinguishes tags sitting in the shed from tags that are actually in animals – and this is really important for NAIT's ability to help with disease control.



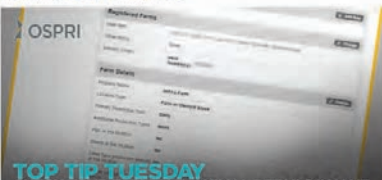
**QUICK TIP:** There's an easy new way to get your NAIT account sorted, called 'stocktake'. Using a scanner, you can scan all your animals and upload one file to the NAIT system. Any unregistered animals will then be automatically registered – easy.

IF YOU NEED A HAND GETTING TO GRIPS WITH REGISTERING YOUR ANIMALS OR WANT TO LEARN MORE ABOUT THE STOCKTAKE FEATURE, JUST GIVE US A SHOUT.

 [naait.co.nz](mailto:naait.co.nz)  0800 482 463



With the new TB slaughter levy now in effect, log in to NAIT to check that your farm production type and animal types are all up to date. <http://naait.co.nz/your-naait/farm-type>



**TOP TIP TUESDAY**  
CHECK YOUR FARM AND ANIMAL DETAILS IN NAIT



# NAIT NUDGE

**HELLO [CORRECT FIRST NAME]**

It looks like you have a lot of NAIT tags in your account that haven't been registered to any animals yet. Can we help?

Registering your animals is a crucial step as it activates the animal's tag in the NAIT system. This distinguishes tags sitting in the shed from tags that are actually in animals – and this is really important for NAIT's ability to help with disease control.



**TUTORIAL**  
REGISTERING ANIMALS







**QUICK TIP**

The NAIT system stocktake feature can help get your account up-to-date quickly.

[Learn how to do a stocktake in NAIT.](#)





**NUTS & BOLTS**

The three year transition period for deer ends on 1 March 2016.

[Learn more about this legislative change.](#)





The new TB slaughter levy comes into effect from today so don't forget to update your farm production type in NAIT. Take a look at our website to find out more: <http://www.tbfree.org.nz/tb-slaughter-levy.aspx>





For the best retention of your NAIT tags, tag the inner ear, close to the head between the two veins.



**TOP TIP TUESDAY**  
TAG THE INNER EAR

21

# THE TBFREE PROGRAMME



## OBJECTIVES OF THE TBFREE PROGRAMME

The first National Pest Management Strategy for Bovine Tuberculosis (TB) was approved by government in 1998. In 2011 a revised strategy came into effect – the National Pest Management Plan (NPMP). 2015/16 was the final year of the 2011 NPMP (now replaced by the new TB plan – see page 55 for more details) that had four goals:

1. Eradicate TB from possums across at least 2.5 million hectares of Vector Risk Area (VRA) by 2026.
2. Keep Vector Free Areas (VFAs) free of TB in wildlife.
3. Keep infected herd numbers as low as possible.
4. Prove that eradication of TB from possums is possible in two challenging proof of concept areas.

Map 1 shows the strategy as it's applied across New Zealand.

## SUMMARY OF PROGRESS

Since 2011 OSPRI, with its industry partners, has made excellent progress to meet the goals of the TB Plan. Highlights include:

- Eradication of TB from 1.6 million hectares since the plan started in 2011 (the TB Plan required VRA reduction of 2.5million ha by 2026).
- Proof that eradication is feasible in two challenging proof of concept areas (Hokonui Hills, and Hauhungaroa- Rangitoto ranges).
- Maintaining an annual infected herd period prevalence rating well below the 0.4% target (at 0.09%) with 43 infected herds 43 as at 30 June 2016.

However, the goal of keeping VFAs free of infection was not fully met, with a new area of wildlife (and consequent herd) infection being found at Mt Cargill near Dunedin, requiring a new VRA classification and programme for eradication.



**MAP 1**

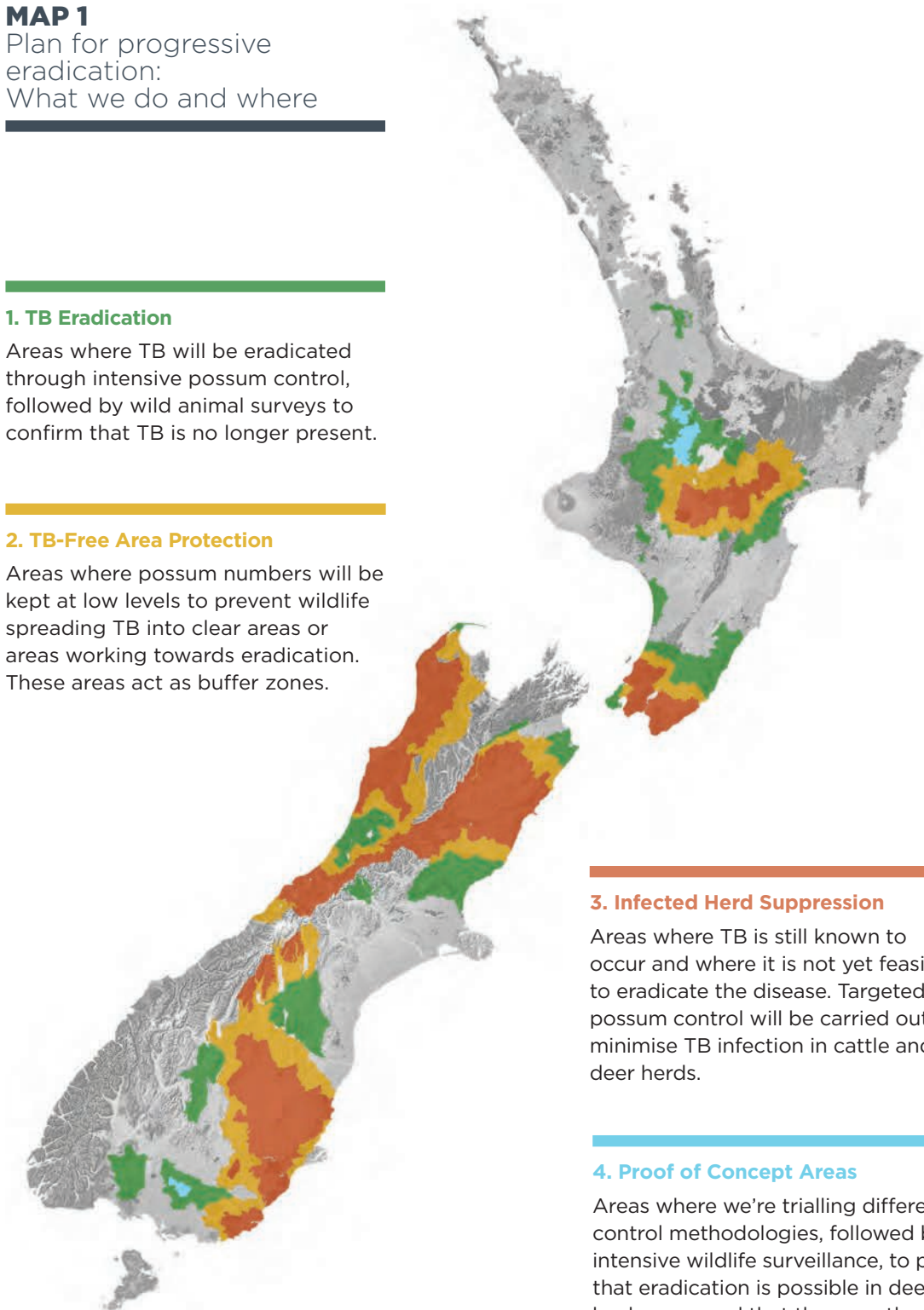
Plan for progressive eradication:  
What we do and where

**1. TB Eradication**

Areas where TB will be eradicated through intensive possum control, followed by wild animal surveys to confirm that TB is no longer present.

**2. TB-Free Area Protection**

Areas where possum numbers will be kept at low levels to prevent wildlife spreading TB into clear areas or areas working towards eradication. These areas act as buffer zones.

**3. Infected Herd Suppression**

Areas where TB is still known to occur and where it is not yet feasible to eradicate the disease. Targeted possum control will be carried out to minimise TB infection in cattle and deer herds.

**4. Proof of Concept Areas**

Areas where we're trialling different control methodologies, followed by intensive wildlife surveillance, to prove that eradication is possible in deep bush areas and that these methods can be used on a wider scale.

Figures 1–3 demonstrate the progress the programme has made since 2003.

### Goal one Eradication progress

During 2015/16 we planned to declare possum TB freedom over 435,000 hectares. The actual number of hectares declared free of possum TB infection was 384,400 hectares; 88% of planned reduction.

The difference was due to insufficient completion of wildlife TB surveys in parts of the central North Island during 2015/16. Additional work planned for the 2016/17 year should allow these areas to be proposed for TB freedom during 2016/17. The cumulative area progressed to eradication since the plan started in 2011 was 1,556,408 hectares by the end of 2015/16.

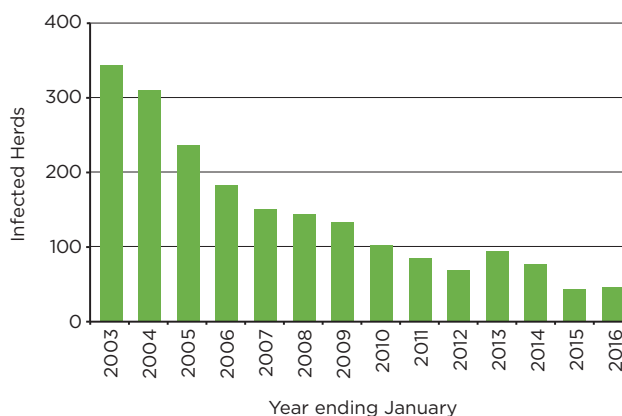
Map 2 illustrates the progress we've made since 2011.

### Goal two Continued freedom from wildlife infection in TBfree Areas

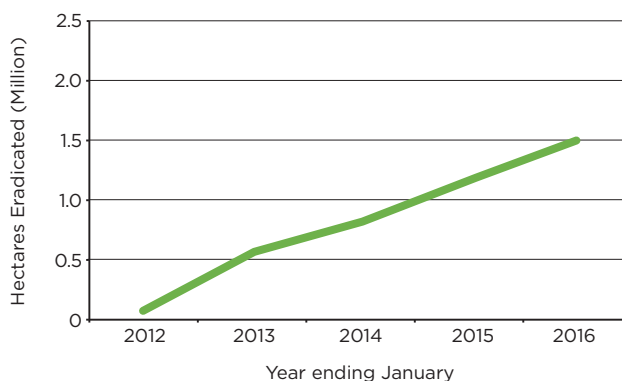
Maintaining disease-free conditions in areas that are already designated as TB free is a key objective of the 2011 TB Plan. TB Free Area Protection (or buffer) areas help to minimise the risk of migration of infected possums by maintaining sufficiently low possum populations in zones between areas of known infection and those that are currently free.

New wildlife infection may occur as a result of the expansion of a neighbouring VRA, through migration of infected possums, or through translocation of other larger wildlife such as pigs or wild deer. At Mt Cargill, near Dunedin, TB infection was found in six possums and one ferret as well as four cattle and one deer herd since November 2015. Investigation has revealed that this is likely to have occurred either by migration of infected possums from the neighbouring VRA, or translocation of larger mammals, such as pigs, from further afield. A large amount of

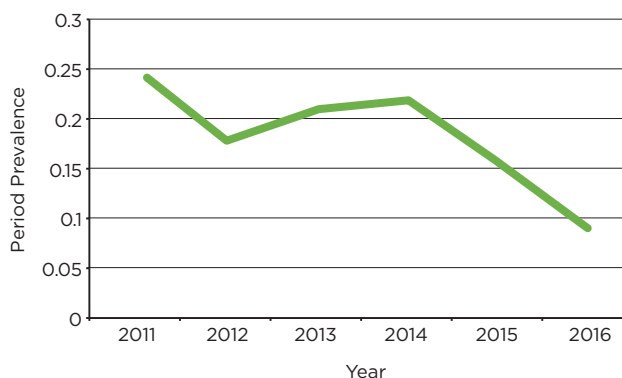
**FIGURE 1:**  
Record low numbers of infected herds



**FIGURE 2:**  
Ahead of target



**FIGURE 3:**  
Period prevalence

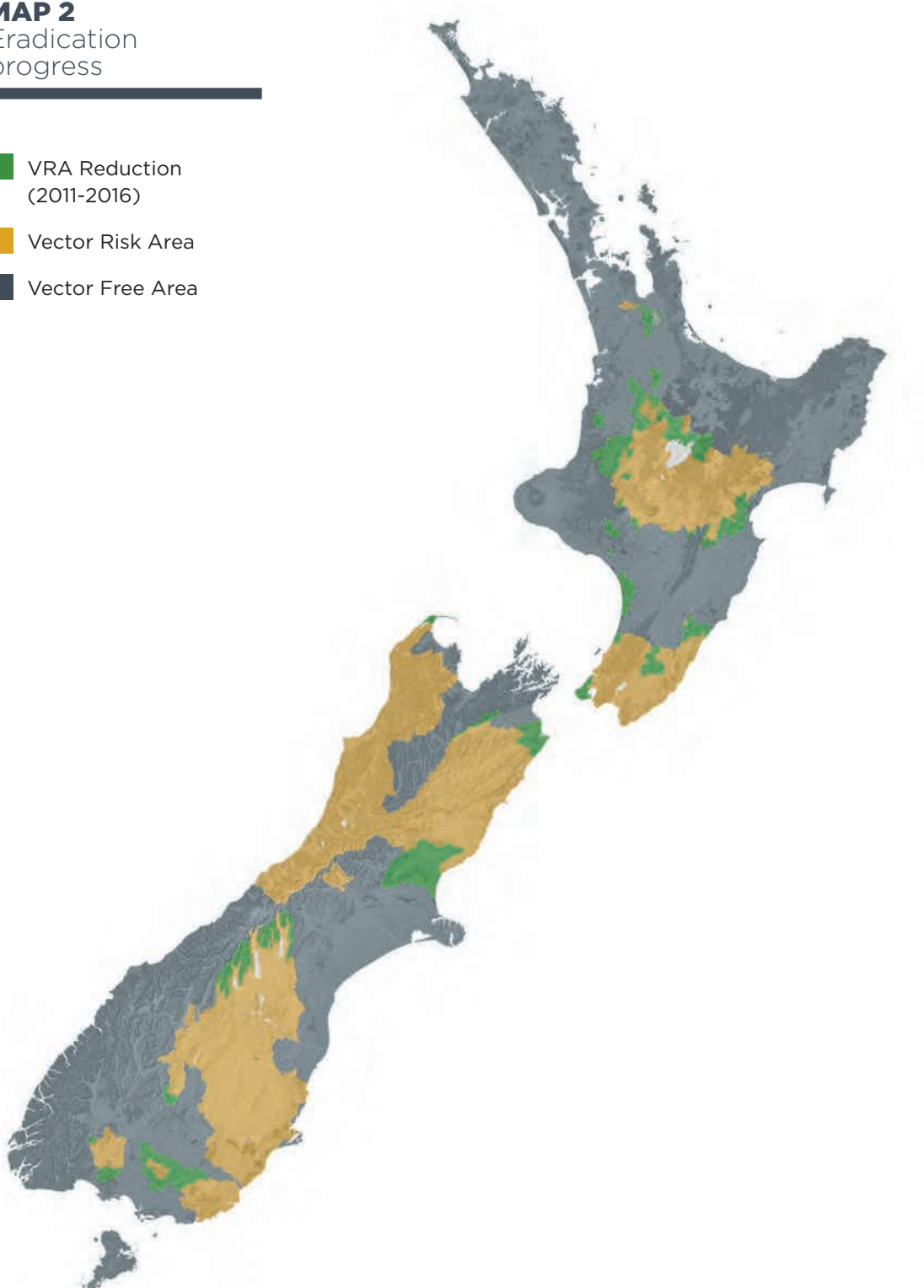




**MAP 2**  
Eradication  
progress

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- VRA Reduction  
(2011-2016)
- Vector Risk Area
- Vector Free Area



wildlife surveillance work was undertaken to determine the spread of the disease. DNA analysis of the TB organism has been completed to try and determine whether the infection was spread from neighbouring VRA or brought in from further North. This is still currently being evaluated. As a result of this finding the Otago VRA has been extended by a total of 12,450 hectares and an eradication plan established as part of the ongoing plan for the southern South Island.

### Goal three **Keeping infected herds numbers below target**

A combination of on-farm TB testing and carcass inspection at slaughter is used to monitor and identify TB infection in cattle and deer herds. Alongside, the application of livestock movement restrictions supports the ongoing management of TB risk. In the instance TB is identified, veterinary investigation, case management, diagnostics and a new animal health monitoring and testing regime are then applied.

This approach, in combination with the extensive pest control programme, has resulted in a significant reduction in infected herds since the inception of the TB management programme. Annual period prevalence is the measure determined by the total number of infected herds annually divided by the national number of herds. The International Organisation for Animal Health (OIE) has determined that a country can be classified as TB free if it maintains an annual infected herd period prevalence below 0.2% for a period of 3 years or more. In 2003, the number of infected herds was 432 and annual period prevalence was 1.9%.

At 30 June 2016 New Zealand had only 43 infected herds (39 cattle and 4 deer) and an annual period prevalence of 0.09%.

### Goal four **Proof of Concept – validating the eradication of TB**

One of the key objectives under the 2011 TB Plan was to prove the concept that TB can be eradicated in large extensive bush areas.

The Proof of Freedom (POF) Utility is the tool that veterinary epidemiologists use to demonstrate that TB has been eradicated in possum populations from any given area after pest control activity and surveys. It involves the evaluation of evidence from wild animal surveys, possum densities that have been maintained in the area over time, and herd testing data, to prove there is a high probability – at least 95% – that TB has been eradicated. Results are then subjected to external peer review.

During 2015/16 the Proof of Concept project was applied to the Hauhangaroa and Rangitoto Ranges in the central North Island and the Hokonui Hills in Southland. Following a peer review of Landcare Research's work to assess the feasibility of TB eradication in large scale bush areas, it was determined that eradication from wildlife is feasible. Final control of the remaining areas of both operations is expected to be completed during the 2016/17 year.

## REGIONAL OVERVIEW

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### Northern North Island

The Northern North Island started the 2015/16 year with eleven infected herds and ended the year on 30 June 2016 with eight. There were three herds cleared and one new breakdown during the year, the latter in a previously infected herd in Taranaki, with residual infection being detected at an extra three year post-clearance parallel blood test in February 2016. Seven of the eight remaining herds had TB identified at the latest tests prior to calving and have been large breakdowns in dairy herds. The past year has continued the trend of large dairy herd breakdowns in the Northern North Island in the VFA.

The progress on Proof of Eradication has been good in 2015/6 with 211,418 hectares proposed for consideration and 135,747 ha now reclassified as VFA. Rangitoto Range and North Taupo East (53,055 ha) reached the required statistical level of eradication confidence, but further pig samples were required by the review panel to improve the coverage of surveillance. Two other areas totalling 22,616 ha did not have surveys completed in time (May 2016) but these surveys have since been completed and the areas will be included with the 2016/17 Proof of Freedom cases.

The final aerial possum control for the Hauhungaroa Ranges was completed in 2016 and surveillance work will now be undertaken for the Proof of Freedom analysis.

### Southern and Eastern North Island

The Southern and Eastern North Island started the 2015/16 year with three infected herds and ended the year on 30 June 2016 with two. There were two herds cleared and one breakdown during the year. The breakdown was a large dairy herd located close to the Kaimanawa Ranges in an area with a history of TB in feral vectors and in herds. Since becoming infected the herd has completed one clear whole herd test. The second infected herd is located close to the Rimutaka Forest Park, in an area where infected possums and pigs have been found. Initial aerial and ground control of this area is planned for the 2016/17 year.

Good progress with disease freedom resulted in the frequency of cattle and deer testing being reduced in some areas. During 2015/16 the part of the Wellington Movement Control Area within the Wairarapa was revoked. This meant that 330 herds are no longer under area movement control restrictions.

Progress on Proof of Freedom has been good with 133,700 hectares gaining VFA status in 2015/16. During the year a number of possum and pig surveys were undertaken in areas that are close to TB freedom, with no tuberculous animals being detected.



## Northern South Island

The Northern South Island started the 2015/16 year with 23 infected herds and ended the year on 30 June 2016 with 19. There were 14 herds taken off movement control after returning to a clear status and 11 herds placed under movement restrictions due to TB being identified. Of the new infected herds 9 were dairy herds, one was a beef breeding herd and one a deer herd. The beef breeding herd was located in Canterbury and the rest were on the West Coast including 3 from Karamea. Seven of the new herds had previously been infected. The distribution of infected herds on the West Coast has consolidated down to a few key areas.

Progress has been made toward Proof of Freedom in the Northern South Island with 30,000 ha of VRA revoked during 2015/6, at Cape Farewell (Tasman) and Ure Medway East (Marlborough).

There were no herd breakdowns outside the defined VRA.

## Southern South Island

There was an increase in the number of infected herds in the Southern South Island during 2015/16, primarily due to the new infections around Mt Cargill where 5 herds became infected. The balance of the new herd infections for the year were scattered throughout the very large Otago VRA.

TB eradication was declared in 16 operational areas totalling 94,723 hectares with fifteen of the 16 areas being in Southland and 1 in Otago.

In Southland, possum control has now ceased across the entire Hokonui VRA and the final TB surveillance of the deep bush is underway using released TB free sentinel pigs together with resident wild pigs. This work is expected to be completed and eradication declared for the entire Hokonui VRA by June 2018. The Western Southland VRA continues to harbour a focus of infection in the wildlife and intensive possum control and wildlife surveillance will continue. Infected herd numbers in Southland have remained at zero.

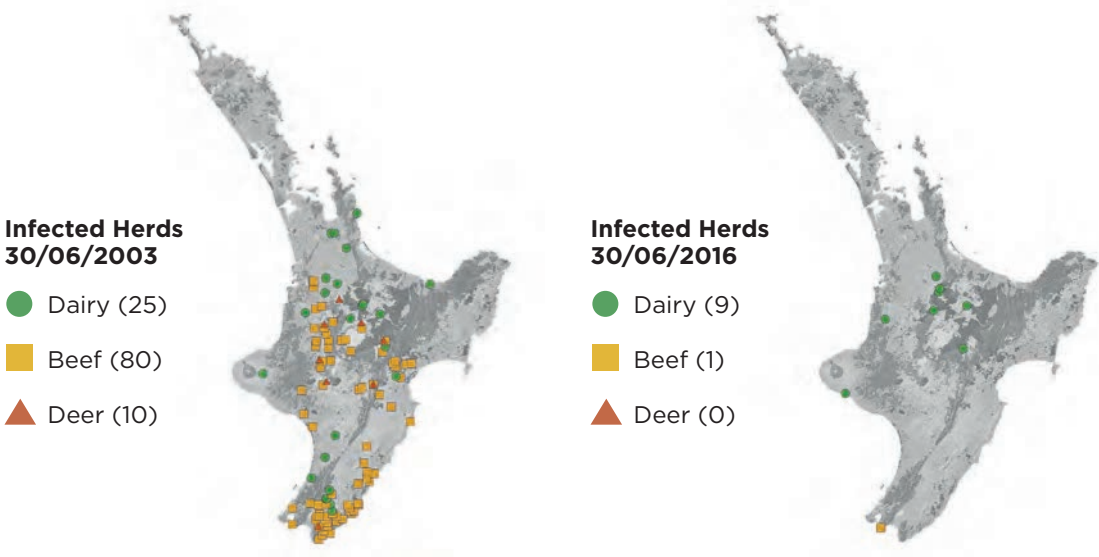
In Otago, most of the VRAs have been effectively contained and TB has been suppressed by intermittent possum control as funding has allowed. These areas will be a key challenge for the new TB plan, with all of the currently infected herds for the Southern South Island being in Otago. There was an 11,000ha increase in the Otago VRA at Mt Cargill near Dunedin where TB was detected in 5 herds and several possums. The area at risk is well contained and cannot spread further due to the proximity of the coastline.

In South Canterbury, progress toward eradication is steady and some areas are approaching the proof of freedom stage where wildlife surveillance is used to verify TB freedom before eradication is declared. Infected herd numbers in South Canterbury have remained at zero.

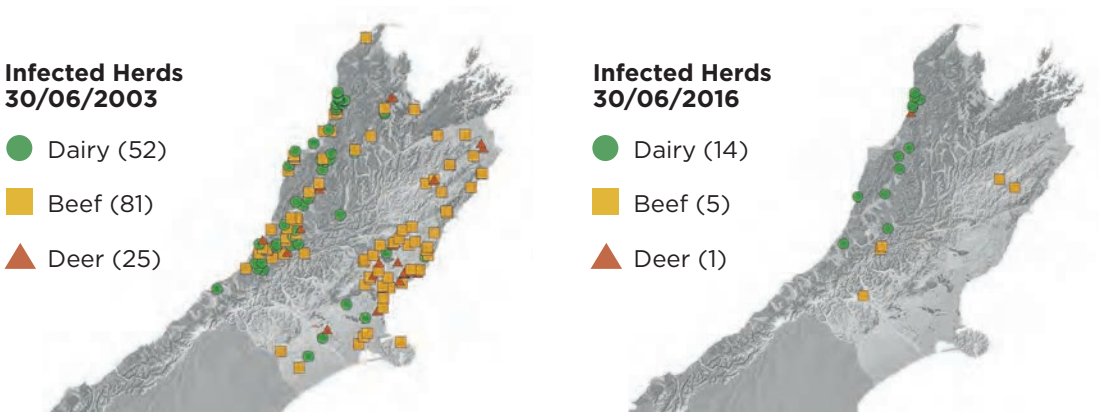
With effect from 1 March 2016 there were major TB testing reductions across the region affecting more than 1700 herds across 1.7 million hectares of land. This included the revocation of area movement control from all areas of Southland and South Canterbury and large swaths of the Otago VRA.

TB INFECTS HERDS

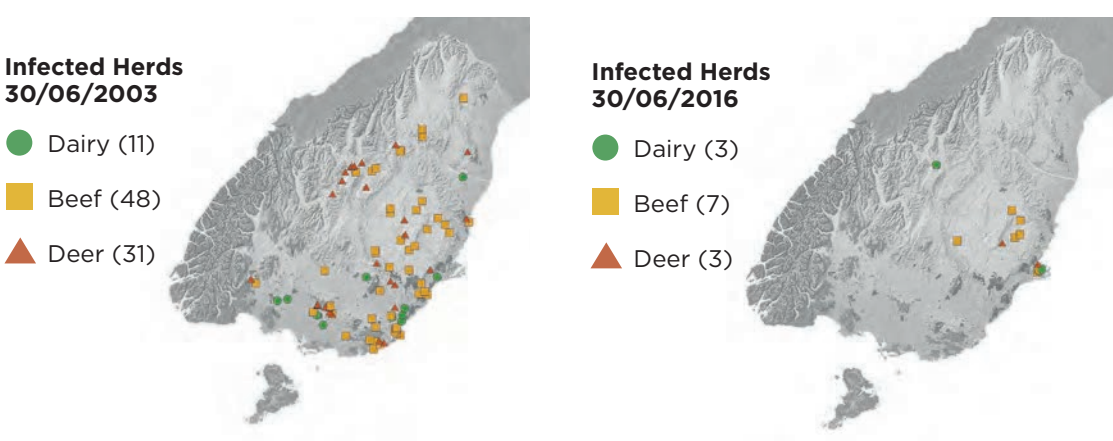
North Island 2003 and 2016



Northern South Island 2003 and 2016



Southern South Island 2003 and 2016



## PEST MANAGEMENT OPERATIONS

Pest management is by far the largest component of the TBfree programme. Operations are designed to reduce the number of pests (defined as vectors) that carry and spread TB to farmed livestock. Research demonstrates that possums are the main disease vectors of TB in New Zealand and they are the primary focus of control operations.

Eradication of TB is achieved by reducing the possum density to a very low and even level (about one possum per 10 hectares) for a period of at least five years. This low density means the disease is unable to be maintained within possum populations and will subsequently disappear from both possums and other wildlife.

An important aspect of the TBfree programme is surveying wildlife to identify and detect whether TB remains. We do this by trapping or culling possums and other sentinel species, such as pigs and ferrets, followed by post-mortem examination and analysis. This is done primarily in areas where we believe TB has been eradicated. The results are used to help determine whether freedom from TB within designated areas has been achieved. We expect to find minimal numbers of possums or other wildlife infected with TB from these surveillance activities, as significant possum control effort has already been undertaken.

### Overview of 2015/16 pest control activities

OSPRI, with Government and industry support, invested \$44 million in 2015/16 for the delivery of ground and aerial pest control operations, with approximately \$36 million on ground control (including monitoring and surveillance) and approximately \$8 million on aerial operations.

Over the course of these operations, more than 400 contractors spent almost 410,000 hours setting and inspecting more than 420,000 traps and detection devices, completing field surveillance work, capturing wild pigs for monitoring and conducting aerial treatment operations. The location and extent of pest control operations are shown below.

### Wildlife and pest species surveillance

Data on wildlife population levels and disease status is gathered through surveillance activities that support the TB eradication programme. These data are analysed through proof of freedom models to provide statistical evidence that the control programme has successfully removed TB from the possum population. Survey work is targeted by focusing on the different TB management areas, these include:

- Surveys in Vector Free Areas (VFAs)
- Surveys in TB Free Area Protection (Buffer) areas
- Surveys in Vector Risk Areas (VRAs)
- Surveys in Infected Herd Suppression Areas

A summary of 2015/16 survey work is outlined below.




#### Surveys in Vector Free Areas (VFAs)

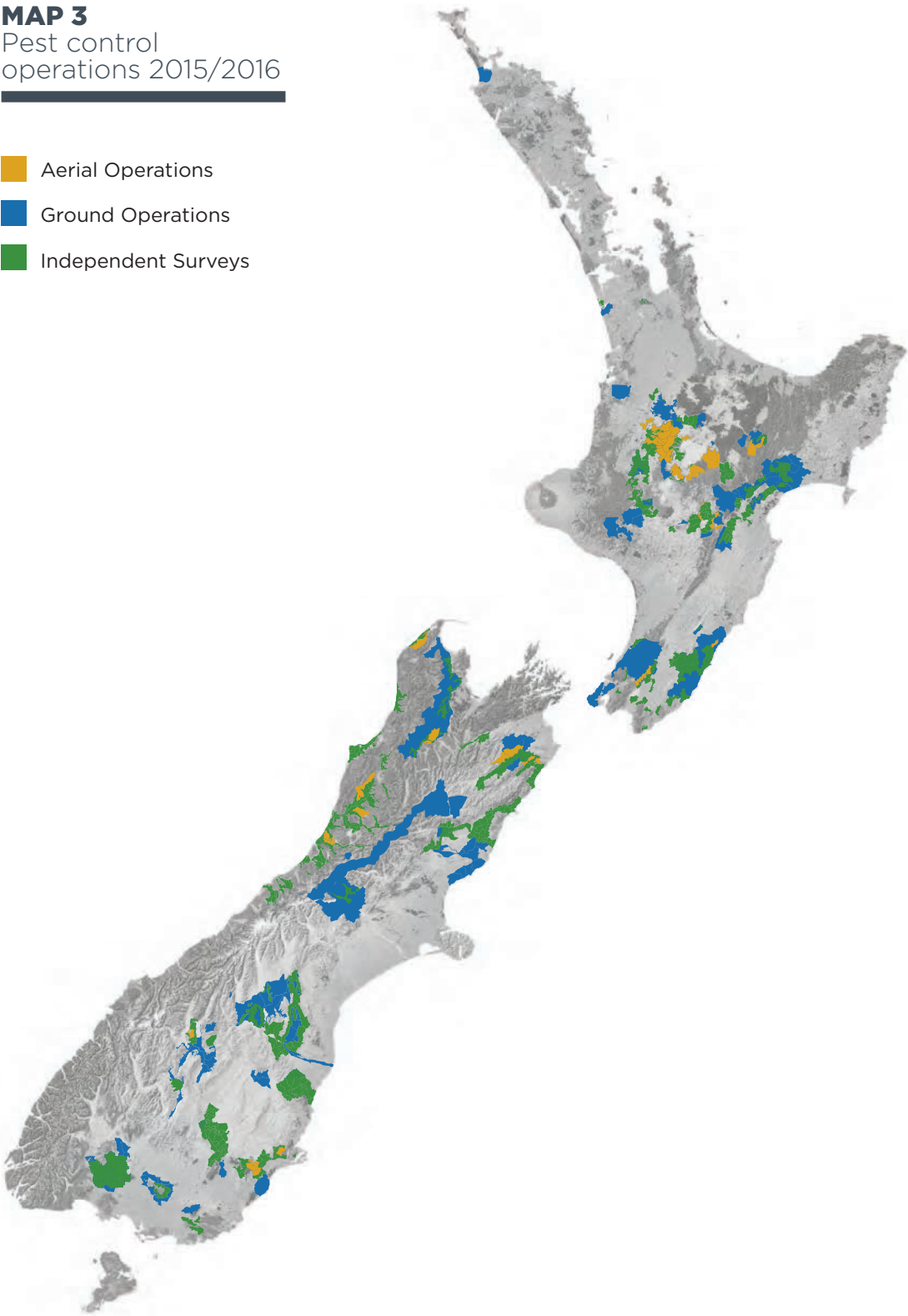
To ensure that VFAs remain free of disease, wildlife surveys are undertaken to determine whether TB wild animals could be present. Surveys are also undertaken when infected herds are found in VFAs and wild animals are suspected as a potential source of infection. Surveys may also be carried out if there is concern that wild animals may have become infected due to potential contact with infected cattle or deer.

A number of intensive wild animal surveys were carried out in VFAs adjacent to VRA boundaries during 2015/16. These will continue where it is considered that there



**MAP 3**  
Pest control  
operations 2015/2016

-  Aerial Operations
-  Ground Operations
-  Independent Surveys



has been a risk of TB-infected wild animals moving into VFAs. Surveys to check for infected wild animals were also undertaken where there is any clustering of infected herds in a VFA. This was the situation that arose near Mt Cargill in Otago in 2015/16 following the finding of TB in both cattle and deer herds (see page 49 for more details).

In 2015/16, a total of 1,751 possums, 229 wild pigs, 5 ferrets, 2 cats and a stoat were captured from across 13 sites to test for TB. Surveys in the North Island included: Northland, Waiuku, Hauturu, Wairoa Buffer and Waitotara. In the South Island they included Golden Bay, northern part of the Main Divide, Timaru Creek in western Otago and Mt Cargill in eastern Otago. Following the identification of TB in a cluster of herds, TB was identified in six possums and a ferret at Mt Cargill.

#### **Surveys in TB Free Area Protection (Buffer) areas**

Wildlife surveys are undertaken in areas that are buffers to TB possums moving from areas that receive no or little possum control (Infected Herd Suppression Areas) into areas where TB has either been eradicated or is in the process of being eradicated from the possum population. In 2015/16, surveys were undertaken in 11 of these areas. Collectively, 62 possums and 99 wild pigs were killed and necropsied. TB was not identified in any animals, demonstrating that the risk of disease migration is being effectively managed.

#### **Surveys in Vector Risk Areas (VRAs)**

Surveys in VRAs are undertaken to gather disease and wildlife population data in order to declare the VRA (or part of it) free of disease, as part of the eradication programme, or to delineate the extent or spread of disease to focus further possum control efforts.

In 2015/16, surveys were undertaken in parts of 13 of the 17 existing VRAs. Possums taken

from two VRAs, Mangaporau and Papaiti were found to be TB free and contributed towards determining that TB had been eradicated. Collectively, 3,166 possums, 1,070 wild pigs, 25 wild deer, 4,198 ferrets, 7 cats, 20 stoats and a weasel were killed and necropsied. TB was diagnosed in 22 ferrets taken from areas with known wildlife infection including Clarence, western part of the Mackenzie Basin and western Southland. The Clarence area is at an early stage of TB eradication so these findings will assist in directing further control.

#### **Surveys in Infected Herd Suppression Areas (within VRA)**

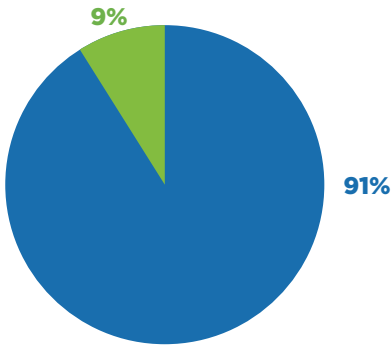
In 2015/16, wildlife surveys were undertaken in seven areas located within VRAs that have never received possum control. The areas surveyed were located within the Kaweka Range, tributaries of the Karamea River in Kahurangi National Park, headwaters and tributaries of the Ahaura River and tributaries of the Whanganui River at Hari Hari. Collectively 934 possums, 60 wild pigs, 19 wild deer and 2 stoats were killed and necropsied. TB was identified in 16 (1.7%) possums that were taken from Kahurangi National Park, the Ahaura River and the Whanganui River. In addition, TB was identified in a deer shot on the West Coast side of the Lewis Pass. Further research may be undertaken around these sites to gain more knowledge as to how widespread the infection is.

Wildlife surveys are also undertaken within VRAs where TB wild animals are known or suspected as being present. In the past these surveys provided guidance on control priorities. Given one of the objectives of the new TB Plan is to eradicate TB from all possum populations, prioritising these areas has become more important. During the year, surveys were undertaken in six areas. Collectively, 822 possums, 131 wild pigs, eight wild deer and eight ferrets were killed and necropsied. TB was identified in 18 (14%) of pigs and in three (37%) deer.

**OVERVIEW OF  
PEST CONTROL ACTIVITIES**  
2015/16

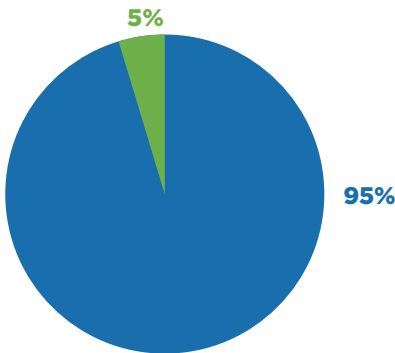
North Island

Ground Operations Total Hectares	2,136,439	\$13,663,294
Aerial Operations Total Hectares	213,113	\$7,719,798



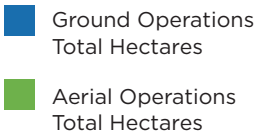
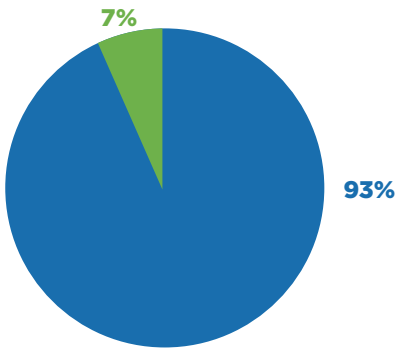
South Island

Ground Operations Total Hectares	2,995,068	\$18,902,750
Aerial Operations Total Hectares	151,240	\$4,514,870



National

Ground Operations Total Hectares	5,131,507	\$32,566,044
Aerial Operations Total Hectares	364,353	\$12,234,668





**SUMMARY TABLE:** 2015/16 showing the number of wild animals sampled by species, and the number and percentage found to be infected with Bovine TB.

	POSSUMS	WILD PIGS	WILD DEER	FERRETS	OTHERS
Number sampled	6,735	1589	52	4,211	24 stoats, 16 feral cats and 1 weasel
Number (%) with TB	22 (0.33%)	18 (1.13%)	4 (7.7%)	23 (0.56%)	

## DECLARING AN AREA FREE OF TB

The national TB plan's objectives include the progressive reduction in size of VRAs and the prevention of TB becoming established in VFAs.

For an area to have its VRA status removed, a panel of reviewers must agree that the evidence indicates there is a very high probability that TB has been eradicated from the possum population. This decision is based on whether an area has met certain criteria, including three major components which are:

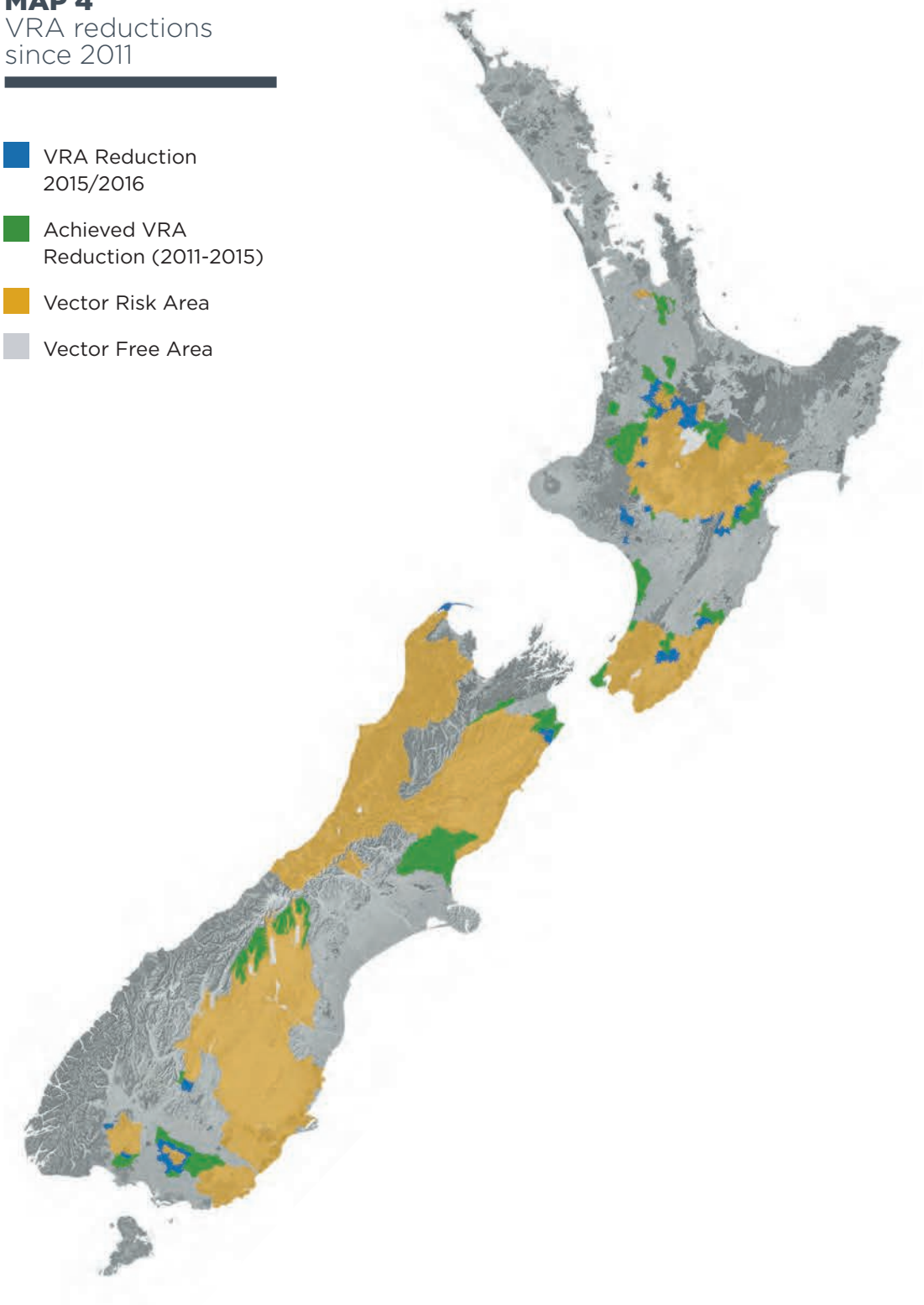
- Qualitative data, such as information on the area's TB history, the effectiveness of possum control and the results of wildlife surveys.
- Quantitative data that includes the outputs from a Spatial Possum Model and Bayesian-based software (Proof of Freedom utility) that indicates there is ~ 95% probability that TB has been eradicated from the possum population.
- Risk assessment that evaluates the risks and potential costs of making a wrong decision.

In 2016, 43 reports on areas proposed for VRA revocation were reviewed by a panel of five experts, including two external panellists. After considering the three major components of each report, they agreed that there was a high probability (~0.95) TB had been eradicated from the 41 areas.

The OSPRI Board of Directors subsequently approved the revocation of the VRA status for these 41 sites, totalling 380,060 ha. This included reductions in the size of VRAs in the Central North Island, Southern North Island, North Canterbury-Marlborough, Hokonui Hills and Western Southland. TB was declared eradicated from two entire VRAs, namely Mangaporau and Papaiti. Since 1 July 2011, VRA status has been revoked from 1,556,408 hectares. As at 30 June 2016 there were 15 discretely defined VRAs, with a combined area of 8,440,600 ha or 84,406 km<sup>2</sup>.

**MAP 4**  
VRA reductions  
since 2011

- VRA Reduction  
2015/2016
- Achieved VRA  
Reduction (2011-2015)
- Vector Risk Area
- Vector Free Area







# ANIMAL HEALTH MANAGEMENT AND TB DISEASE CONTROL

TB control and eradication relies on an effective disease management system that includes animal health surveillance through TB testing and slaughter plant surveillance of cattle and deer, restriction of movement of at risk livestock either at area or herd level, and effective case management following diagnosis. This section of the report summarises the outputs of the TB program in terms of livestock health.

## Animal Health Surveillance

Surveillance for TB in livestock relies on a combination of on-farm TB testing and post-mortem examination at slaughter.

During the 2015/16 year, 43 cattle were found with TB as a result of TB testing and 36 cattle were found with TB during routine slaughter surveillance.

TB testing of cattle involves the application of a caudal fold skin test utilising tuberculin (0.1 ml of a purified protein derivative of the TB organism) injected into the skin of the tail fold and then read 72 hours later. In deer the skin test is applied into the skin on the side of the neck (mid-cervical test). Any skin test positives (determined by a thickening of the skin at the injection site) have a subsequent ancillary serial blood test (Bovigam® gamma interferon blood test) applied to assist in ruling out false positives to the skin test. If the blood test result is positive, animals are determined to be reactors and are taken for slaughter.

If TB is diagnosed in a herd following confirmation through approved laboratory testing, a Restricted Place Notice under section 130 of the Biosecurity Act 1993 is placed on the herd. This restricts any movement of stock from the herd (except to slaughter) without a permit. This on-farm biosecurity process then limits any spread of the disease through cattle or deer movement from that point forward.

The infected herd then comes under case management by a veterinarian. The case management process involves tracing any movement into and out of the herd prior to diagnosis (see Mt Cargill case study). Any livestock identified as having moved out of the herd will then have further TB testing undertaken in their destination herd. The trace back of livestock is used to assist in determining whether cattle or deer movement is likely to have been a contributing source for introduction of disease (see section on infected cattle herds). DNA analysis of the TB organism (*M. bovis*) is also used to determine whether TB has been introduced by contact with wildlife or by livestock movement, or was potentially residual within the herd. An important aspect of case management is engagement with the farmer to understand the causation of the disease and the best management regime – including further TB testing and slaughter of test positives – in order to clear the herd as quickly as possible. A herd cannot be declared free of TB until it has had at least two clear whole herd tests at a minimum of six months apart.

OSPRI runs an extension programme in liaison with DairyNZ, Beef and Lamb NZ and Deer industry (DINZ) as well as Federated Farmers in order to increase farmer understanding of TB and the eradication programme. The extension programme

also provides support for farmers who have TB diagnosed in their herd, to help them manage through to freedom.

### Infected herds and national period prevalence

At 30 June 2016, there were 39 infected cattle herds, the same number as at June 2015. During the year, TB was identified in 23 new cattle herds, one fewer than in 2014/15. However, four of the herds were located at Mt Cargill, in a new extension to the Otago VRA in the Southern South Island, where TB possums and a ferret were identified in 2015/16. Epidemiological investigations found that vectors, primarily infected possums, were considered as the source of infection for 66% of the new TB infected cattle herds identified within VRAs.

For deer, the number of infected herds increased from two to four, with two new infected herds being identified during the year. For both, epidemiological investigation indicates they were due to contact with infected wildlife. A total of six deer were found infected in 2015/16 (two lesioned reactors and four found during routine slaughter), relative to the five TB deer found in 2014/15.

The infected herd period prevalence (for cattle and deer combined) in 2015/16 was

0.09%. This is the second sequential year when the infected herd period prevalence has been less than 0.2%. The World Organisation for Animal Health (OIE) requires a country or region to maintain its infected herd period prevalence below 0.2% for three consecutive years before it can be declared officially free of bovine TB. Thus provided New Zealand maintains its infected herd period prevalence below 0.2% in 2016/17, it will be able to be declared officially free of bovine TB.

What is not readily apparent from the 2015/16 data is the impact over past years of widespread possum control on infected herd period prevalence, herd breakdown and clearance rates. Table 2 shows the large difference vector control has made since 1992/93, when there was minimal possum control and infected possums were still spreading from VRA boundaries. In comparison, by 2002/03 most VRAs had received some possum control and TB possum spread had largely been contained.

By 2015/16 widespread and effective possum control has been undertaken in most areas and TB has been eradicated from infected possum populations from approximately 1.55 million ha since July 2011. However, the Mt Cargill breakdown has caused an increase in the herd breakdown rate relative to 2014/15.

**TABLE 2:** Disease metrics over three different time periods for cattle and deer herds located in VFA and VRAs

VECTOR AREA STATUS	INFECTED HERD PERIOD PREVALENCE PERCENT			HERD BREAKDOWN RATE PER 1000 HERDS			INFECTED HERD CLEARANCE PERCENT		
	1992/93	2002/03	2015/16	1992/93	2002/03	2015/16	1992/93	2002/03	2015/16
Period									
VFA	1.3%	0.15%	0.02%	6.8	0.73	0.03	68%	83.3%	42%
VRA	14.9%	3.8%	0.48%	50.3	13.21	2.1	32%	58.5%	43%
Total	3.6%	0.91%	0.09%	13.4	3.3	0.36	42%	61.4%	43%

## CATTLE

### Infected cattle herds

At 30 June 2016, there were 39 infected cattle herds, the same as at 30 June 2015. Of these infected herds:

- 82% were located in VRAs
- 74% were located in the South Island
- 69% were dairy or dairy dry herds.

The herd breakdown rate (incidence) for 2015/16 was 3.4 per 10,000 herds, and the herd clearance rate was 45 percent. The relatively low herd clearance rate impacted on the number of infected herds at 30 June 2016.

For the 39 herds infected at 30 June 2016, veterinary assessments based on epidemiological investigations identified that:

- 62% of herd infections were linked to TB wild animal sources
- 23% were caused by livestock movement
- 15% involved redetection of residual infection

Twenty-two of these 39 herds were newly infected during the year, of which 9% were assessed as infected due to movement. Of the 21 newly infected herds identified in VRAs,

TB wild animals were assessed as the source of infections for 66%, with residual infection and movement being responsible for 24% and 10% of new herd infection respectively. While vector control has been effective in reducing the number of new vector related infected herds in VRAs (24 in 2009/10 vs 14 in 2015/16), TB possums are still responsible for the majority of new infections found. Data for the year is summarised in Table 3.

Figure 4 shows the fall in infected herd numbers since June 2004 by vector area status (VFA, VRA). The annual number of infected herds is expected to trend down to zero over the next 10 years. This is likely to be a relatively smooth reduction. While, isolated upsurges in the number of infected herds may occur, it is expected these will be quickly controlled.

### Cattle testing and reactors

Cattle testing data is summarised in Table 4, which compares the number of TB tests carried out on cattle and the number of reactors to tests in 2014/15 and 2015/16. In the year to 30 June 2016, 3.72 million cattle (2.75 million dairy and 0.97 million beef) were tested using the intradermal caudal-fold tuberculin<sup>1</sup> test (primary skin test), compared to 4.4 million in the previous year. The decrease in the number of cattle

**TABLE 3:** Sources of infection for newly-infected and all infected cattle herds as at 30 June 2016

	CATTLE INTRODUCED FROM INFECTED HERDS	CATTLE INTRODUCED FROM NON-INFECTED HERDS	RESIDUAL HERD INFECTION	WILD ANIMAL
Newly infected herds in VRA & VFAs	0 (0%)	2 (9%)	6 (27%)	14 (64%)
Newly infected herds in VRAs	0 (0%)	2 (10%)	5 (24%)	14 (66%)
All infected herds	3 (8%)	6 (15%)	6 (15%)	24 (62%)

1. Prionics Lelystad tuberculin, 3000 IU/dose



tested in 2015/16 relative to 2014/15 is in part due to a reduction in herds under annual testing as a consequence of TB being eradicated from possums and in part due to reductions in the number of herds and animals programmed for testing in the triennial and biennial testing areas.

During the year, 6011 cattle were classed as positive to the primary intradermal (skin) tuberculin test and 73 were slaughtered without further testing. The remaining 5938 test-positive cattle were administered serial ancillary (blood) tests as follows:

- Standard gamma interferon (Bovigam®) tests were applied to 3,582 cattle of which 0.95 per cent tested positive and were declared TB reactors. On slaughter, 47 per cent of these animals were found to have TB lesions, or *M. bovis* was cultured from lymph nodes following slaughter.
- Special Antigen gamma interferon (Bovigam®) tests were applied to 2,356 cattle, of which 2.4 per cent tested positive and were declared TB reactors. On slaughter, 28 per cent of these TB reactors were found to have TB lesions, or *M. bovis* was cultured from lymph nodes following slaughter.

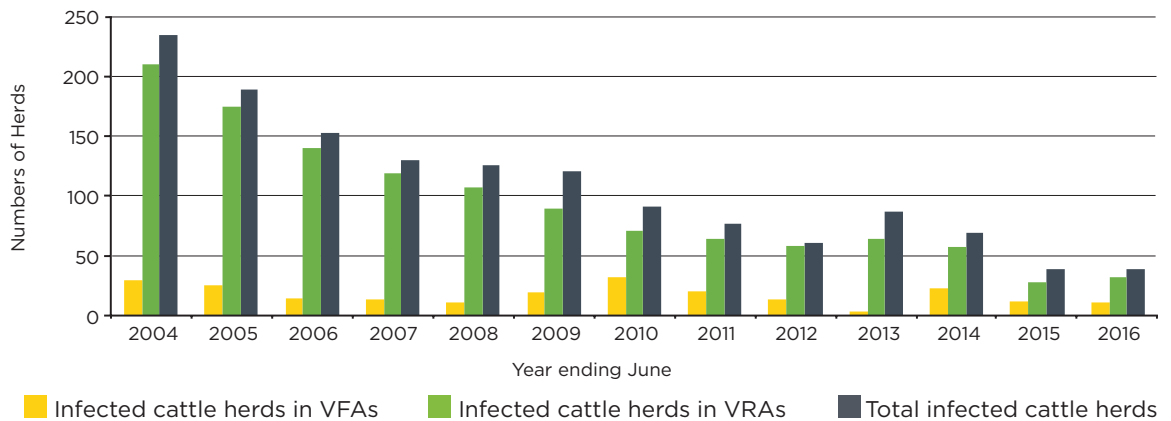
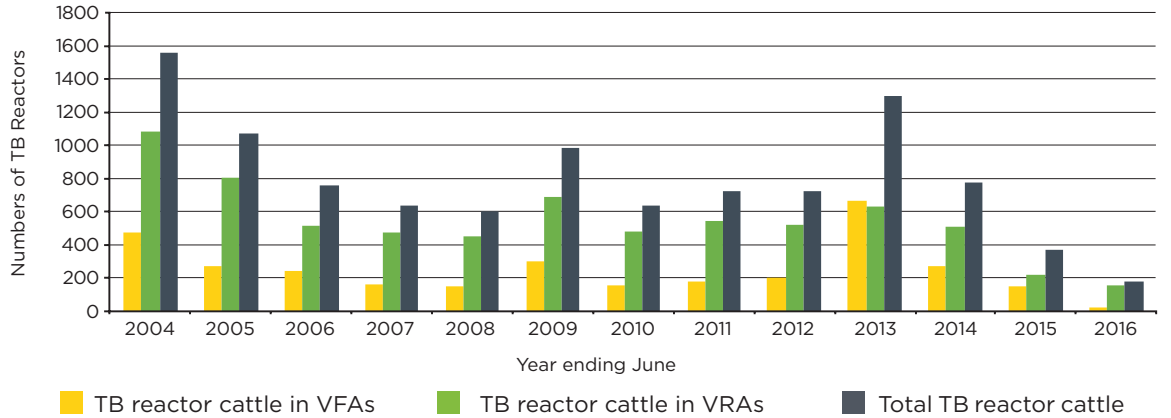
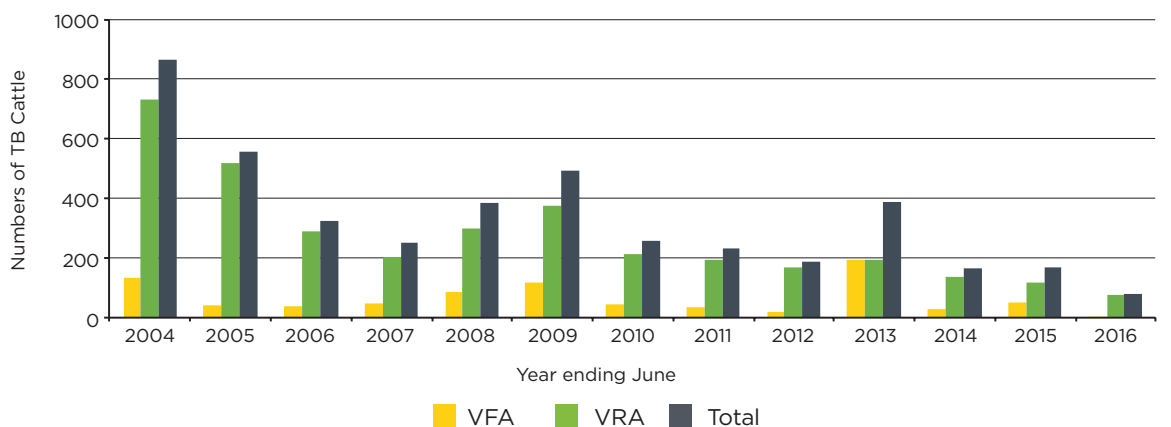
In addition, ancillary parallel gamma interferon (Bovigam®) tests were performed on 9,905 cattle that tested negative to the primary skin test for TB, but were re-tested as they were within an infected herd. Of these, 14 (0.14 per cent) tested positive and were slaughtered as TB reactors. On slaughter, one (7%) of these TB reactors was found to have gross TB lesions at slaughter. Parallel blood tests were used in acutely, or chronically, infected herds to reduce the time to eradicate infection. Further, the majority of cattle in infected herds are required to pass a parallel Bovigam test following their second clear skin test before they can be cleared of TB. This testing process is used as part of the case management of infected herds by the managing veterinarian.

Figure 5 shows the trend in cattle reactors from 2002/03 to 2015/16. It clearly shows the increases in the number of cattle reactors slaughtered in 2003/04, 2008/09 and 2012/13 and then as predicted, dropping to the extent of recording the lowest number of reactors ever in 2015/16. These results are expected as the prevalence of TB within both livestock and wildlife decreases following the extensive TB management programme now in place.

**TABLE 4:** Cattle TB test results for 2014/15 and 2015/16

CATTLE TESTING	2014/15	2015/16
Primary tuberculin tests on cattle	4,410,953	3,723,977
Cattle positive to primary skin test	9,640	6,011
Primary test-positive cattle slaughtered	104	73
Primary test-positive cattle ancillary serial tested	9,536	5,938
Ancillary serial test-positive cattle	179	91
Ancillary parallel test-positive cattle	87	14
<b>Total cattle reactors slaughtered</b>	<b>370</b>	<b>178</b>
	<b>(8/100,000 tested)</b>	<b>(5/100,000 tested)</b>

A crude caudal-fold test specificity of 99.8% can be derived from this data (cattle positive to the primary test as a percentage of cattle tested, assuming all test positives were not infected).

**FIGURE 4:** Number of Infected Cattle Herds**FIGURE 5:** Number of Cattle TB Reactors**FIGURE 6:** Number of Tuberculous cattle

## Tuberculous cattle

The number of tuberculous (confirmed infected with TB) cattle includes the total number of cattle (both reactors and cattle found during routine slaughter) with gross TB-like lesions, or otherwise identified as infected following Polymerase Chain Reaction (PCR) assay or culture of *M. bovis* from tissues. During 2015/16, 43 (24%) of the 178 reactors slaughtered showed visible TB lesions or had lesions sampled that were confirmed as being infected with *M. bovis*. Bovine tuberculosis was also identified in a further 36 cattle during routine slaughter (1.4 per 100,000 cattle slaughtered, based on 2.6m cattle slaughtered in 2015/16). Figure 6 illustrates the long-term trend for TB found in cattle from 2003/04 to 2015/16 and shows the overall decline in the number of TB cattle, despite spikes in 2003/04, 2008/09 and 2012/13. This mirrors that for reactors (Figure 5). As with reactors, the number of TB cattle observed in 2015/16 is the lowest number ever recorded.

## DEER

### Infected deer herds

At 30 June 2016, there were four infected deer herds (0.17 per cent of the total farmed deer herd population). All infected herds were located in South Island VRAs.

Figure 7 shows that following the steep decline in the number of infected deer herds that occurred between June 2004 and June 2010. Numbers have remained relatively steady and low, between two and five herds.

The reduction since 2003/04 is largely due to maintaining low possum densities over large areas of New Zealand. It also reflects a large reduction in the number of deer being farmed. Ferret trapping in TB risk areas, and testing policy changes aimed at clearing infected herds more quickly, also contributed to the decrease early in this period, particularly in the Canterbury and Otago VRAs.





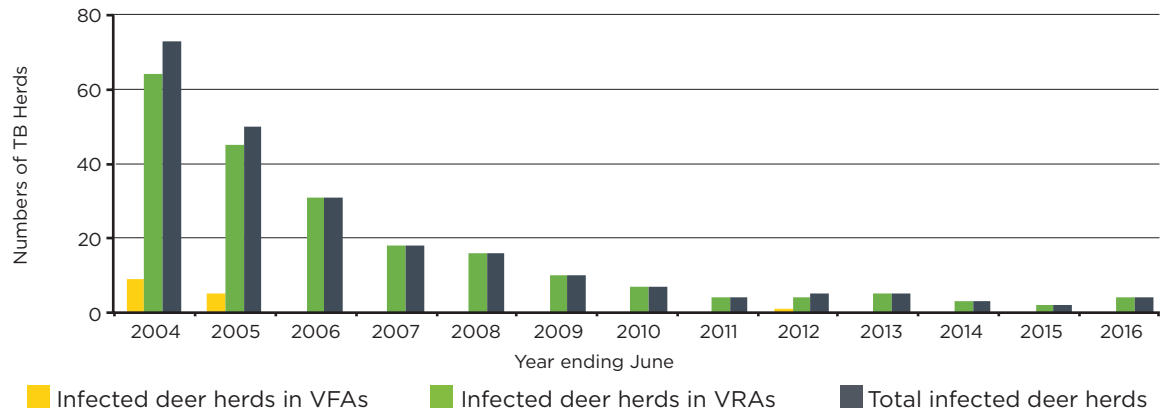
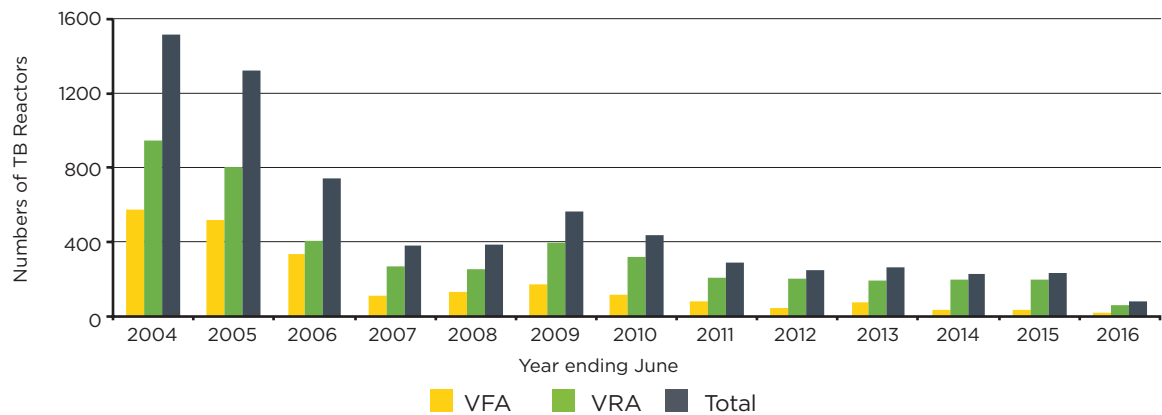
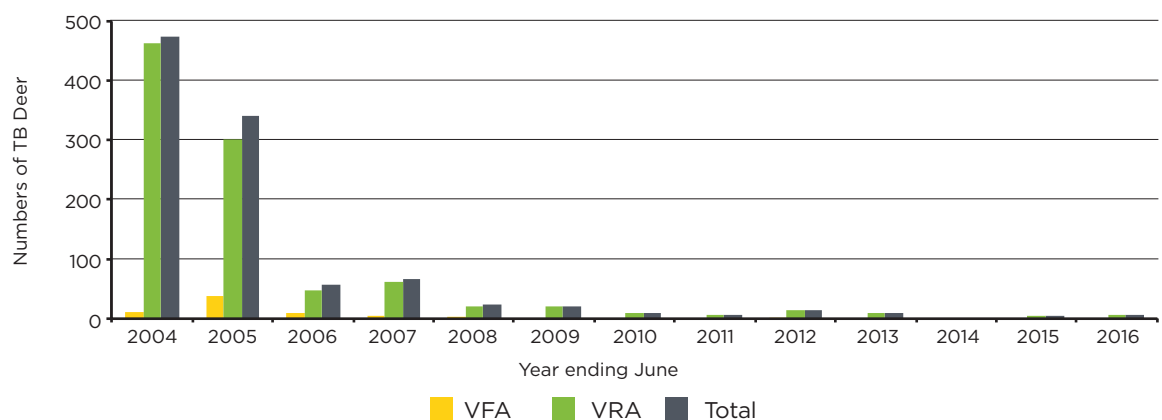
**FIGURE 7:** Number of Infected Deer Herds**FIGURE 8:** Number of Deer TB Reactors

Figure 8 shows the trend in deer reactors from 2003/04 to 2015/16 by TB risk status area. Future reactor deer numbers are expected to fluctuate between 100 and 400.

**FIGURE 9:** Number of Tuberculous Deer

**TABLE 5:** Deer TB testing results for 2014/15 and 2015/16

DEER TESTING	2014/15	2015/16
Primary tuberculin tests on deer	252,551	206,665
Deer positive to primary mid-cervical test	1240	735
Primary test-positive deer slaughtered	207	75
Primary test-positive deer ancillary serial tested	1033	660
Ancillary serial test-positive deer	27	4
Ancillary parallel test-positive deer	0	0
<b>Total deer reactors slaughtered</b>	<b>234</b> <b>(9/10,000 tested)</b>	<b>79</b> <b>(4/10,000 tested)</b>

A crude caudal-fold test specificity of 99.6% can be derived from this data (deer positive to the primary test as a percentage of deer tested, assuming all test positives were not infected).

### Deer testing and reactors

Deer testing data is summarised in Table 5, which compares the number of TB tests performed and the number of reactors to tests in 2014/15 and 2015/16. In the year to 30 June 2016, 206,665 primary mid-cervical intradermal tuberculin tests (skin tests) were performed on deer compared to 252,551 in the previous year.

During the year, 735 deer tested positive to the mid-cervical skin test and 75 of these were slaughtered without further testing and two were found with TB lesions. The remaining 660 deer were administered serial ancillary tests including:

- Comparative cervical skin tests on 113 deer, with no positive animals.
- ETB or Modified ETB (IgG1 ELISA) tests on 547 deer, of which 4 (0.6 per cent) tested positive and were declared TB reactors. On slaughter, none of the TB reactors were found to have TB lesions or *M. bovis* confirmed.

No ancillary parallel ELISA tests were performed on deer in 2015/16.

Figure 8 shows the trend in deer reactors from 2003/04 to 2015/16 by TB risk status area. Future reactor deer numbers are expected to fluctuate between 100 and 400.

### Tuberculous deer

The number of tuberculous deer includes the total number of deer (including reactors and deer found during routine slaughter) with gross TB-like lesions – or otherwise identified as infected following PCR assay or culture of *M. bovis* from tissues.

During 2015/16, there were 2 reactors with visible TB lesions and four deer found with TB lesions during routine slaughter. Figure 9 shows the trend in number of tuberculous deer between 2003/04 and 2015/16.





# DISEASE CONTROL AREAS AND MOVEMENT ZONING

TB management requires the restriction of livestock movement from infected herds (where in most circumstances, cattle or deer can only move to slaughter) and from movement control areas where the TB risk from wildlife is considered high. Under the TB programme, New Zealand is divided into distinct disease control areas that have specific livestock testing requirements, as follows.

## Disease Control Areas (DCAs)

Areas of New Zealand are categorised into various TB testing regimes based on the risk of infection. These consist of Movement Control Areas (MCAs), Special Testing Areas (STA-annual and STA-biennial) and Surveillance Areas. To find out which testing regime a herd falls under, check the Disease Control Areas (DCA) map at [www.tbfree.org.nz](http://www.tbfree.org.nz) or contact TBfree New Zealand. The DCAs are also shown in Map 5.

As TB is progressively reduced or eradicated in each area, the definition and boundary of each specified disease control area (DCA) is reviewed and testing requirements amended in association with residual disease risk. This year's DCA changes resulted in changes to the existing restrictions applying to 5.3 million hectares, approximately 10,000 herds and resulted in 500,000 fewer TB tests for farmers. This progress was communicated extensively through our TBfree committees and a media campaign.

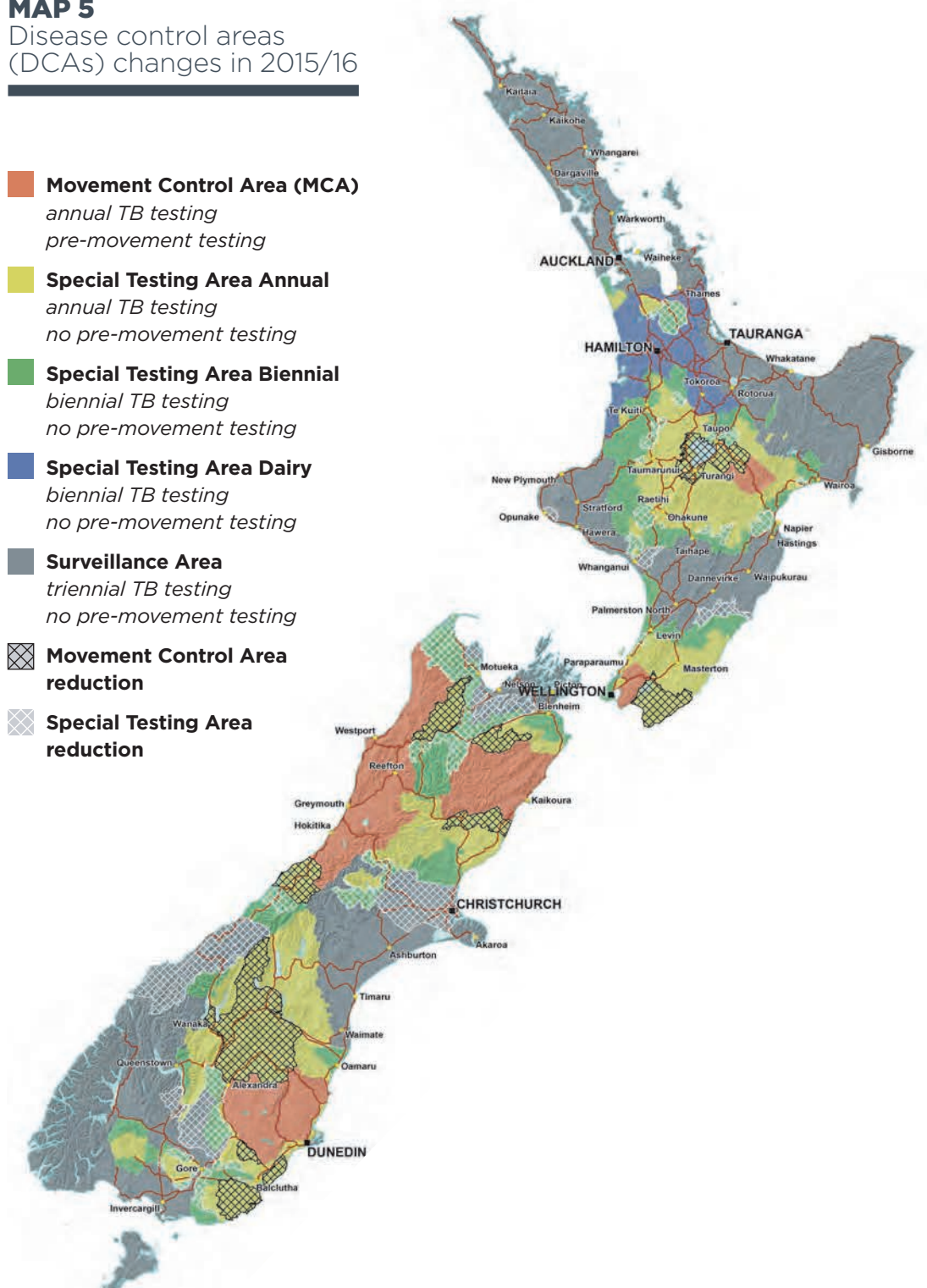
**TABLE 6:** DCAs and summary statistics for cattle and deer herds combined

	MCAS	STAS (ANNUAL AND BIENNIAL)	SURVEILLANCE AREAS	NEW ZEALAND
Land area	31,064 km <sup>2</sup>	117,979 km <sup>2</sup>	119,333 km <sup>2</sup>	268,376 km <sup>2</sup>
Total herds at June 2016	3,642	20,987	45,302	69,931
Infected herds at June 2016	28	10	5	43
Infected herd period prevalence % for 2015/16	1.15%	0.08%	0.02%	0.09%
New infected herds per 1000 herds during 2015/16	4.6	0.3	0.02	0.36
Percent of infected herds cleared of TB during 2015/16	42%	52%	31%	43%
Animals tested in 2015/16	737,136	1,836,248	1,357,258	3,930,642

**MAP 5**

Disease control areas (DCAs) changes in 2015/16

- Movement Control Area (MCA)**  
*annual TB testing*  
*pre-movement testing*
- Special Testing Area Annual**  
*annual TB testing*  
*no pre-movement testing*
- Special Testing Area Biennial**  
*biennial TB testing*  
*no pre-movement testing*
- Special Testing Area Dairy**  
*biennial TB testing*  
*no pre-movement testing*
- Surveillance Area**  
*triennial TB testing*  
*no pre-movement testing*
- Movement Control Area reduction**
- Special Testing Area reduction**



## RESEARCH AND DEVELOPMENT

OSPRI has supported a significant Research and Development (R&D) programme for more than 20 years. Our research is directed at the development and implementation of new tools and processes for vector control, and understanding the ecology of wildlife vectors and TB. We contribute to veterinary science and epidemiology, biology, engineering and environmental science.

The new National Pest Management Plan for TB has targets that extend to 2040 (TB-freedom in possums) and 2055 (TB eradication from NZ). Achievement of these outcomes will require ongoing research and development support to address the continuing demands for reducing the costs of vector control and proving TB freedom.

Consequently, it is critical that research capability is maintained either in the relevant research institutes and universities, or within OSPRI. Importantly, OSPRI plays a key role in investment in research and development for pest management practices and methodologies, alongside livestock health. OSPRI also seeks to build capability by ensuring its investments include the support of Masters, Post-graduate and Post-doctoral study programs.

In 2015/16, 21 of 25 funded projects were continuations of multi-year projects. These build on the OSPRI R&D Strategy that is currently being progressed with the inputs of internal and external stakeholders.

The process to define OSPRI's R&D Strategy identified the following research themes:

- Active surveillance approaches for Proof-of-Freedom
- Passive surveillance approaches for post-TB assurance
- Methodologies for TB control – aerial and ground-based control
- Improved mapping technologies to support TB surveillance
- Causality of TB persistence
- New and alternative technologies and tools for vector control
- Disease diagnostics
- Strategic optimization of surveillance and control techniques and enhanced modeling

These themes will be further investigated and developed as OSPRI progresses its R&D strategy for the next 5 years. In conjunction, OSPRI will continue progressing collaborative investments in research with a range of agencies and institutions to ensure that the TB program remains underpinned by sound science.

The following sections provide highlights of OSPRI's current research and development activities and projects.



## DISEASE RESPONSE ACTIVITIES: **THE MT CARGILL OUTBREAK**

Early in 2015 the number of infected cattle herds in Otago was zero, although there were two infected deer herds in the high country of Central Otago. From a peak of 306 infected herds in 1998, two decades of TB testing, possum control and stock movement restrictions had almost eradicated disease from farmed livestock in the province.

When routine testing at slaughter determined TB in carcasses from three herds from the Mt Cargill area, immediate action was required. As well as investigating the source of the infection through laboratory strain-typing, OSPRI sought to contain the outbreak at the affected properties and prevent stock movement.

To track the source of the disease and determine whether it was from wildlife or livestock movement, contractors trapped possums on and around the affected farms for autopsy by lab staff. This confirmed the outbreak was a new wildlife-based infection in an area previously free of disease.

Ferret surveillance was undertaken (ferrets scavenge tuberculous possums and become infected, which indicates the spread of disease), then possum control with traps and toxins helped contain the disease in wildlife. Intensive stock testing quickly cleared one herd and will continue until all are free of disease. This will combine with ongoing possum control to remove the source of disease.

Throughout the outbreak response, open communications and ongoing updates with the affected farmers and the wider community enabled the best results to be achieved.

The Mt Cargill outbreak is a reminder that wildlife-borne bovine TB still poses a threat to farmed cattle and deer, and confirms the value of OSPRI's efforts towards the eventual eradication of TB.



## Post-control possum aggregation in forests and farmlands

To prevent TB persisting in a possum population it is necessary to reduce the density of possums to a level at which the possum-to-possum contact rate is low enough to prevent TB being transmitted from an infected to an uninfected possum. If, however, after control, surviving and immigrant possums seek each other out and re-aggregate to form local clusters of possums with densities sufficient for TB to persist, then it is critical we know whether such re-aggregation is occurring. Such knowledge will ensure necessary follow-up control is applied, and that the computer models used to predict TB persistence have realistic possum distributions and densities.

This project investigated possum distribution and movements following control in a large area of forest and farmland in the central North Island. Possum distribution was mapped using chewcards immediately before and up to three years after control. About 20 possums in each site were also collared with GPS units to monitor changes in their home ranges. One year after control, possums were clustered at both sites with 80% of the forest possums occupying only 29% of the area.

The shift of possum home ranges after control, the resulting clustering of animals, and the association of possums with members of the opposite sex suggested the likely driver of post-control aggregation was possums seeking mates. After control, possums also increased their home ranges with forest possums having mean ranges of 90ha and farmland possums 56ha relative to home ranges of 2-5ha in uncontrolled populations. Knowledge of possum re-aggregation after control is being integrated into our possum population models. What is unknown at this stage is if such re-aggregation does enable TB to persist in these low density possum populations.

## Low-cost aerial application of 1080 baits

Aerial application of 1080 baits continues to be an important tool for cost-effectively controlling possums over large areas of forest that are difficult or expensive to control using ground-based control methods. Given limited control budgets, cost remains one of the key constraints on the size of area over which control can be applied in any one year. Consequently, there is an ongoing need to reduce aerial control costs, and this research project builds on a series of previous research projects that examined bait sowing rates, flight path spacing, and broadcast, strip and cluster sowing.

Previous research showed that sowing baits in strips (40-60m wide) and leaving gaps of unbaited land between them, obtained percentage kills similar to that obtained through total bait coverage. The wider the flight-path spacing, the less flying time is required to cover a control area, which reduces cost. However, as flight path spacing increases, so does the width of unbaited areas, and it is important to know how wide these unbaited areas can be before the effectiveness of the control operation is compromised. Additionally, although helicopters with underslung buckets have become the aircraft of choice for distributing baits, shifting from broadcast sowing to strip sowing provides the opportunity of using fixed-wing aircraft, which because of their higher flying speeds can provide additional savings, particularly for applying baits over very large areas of forest.

This project determined the cost-effectiveness of using fixed-wing aircraft and the effect of widening the flight path spacing. Results showed that in the area treated, which was unforested scrub-covered land with low to medium possum densities, pre-fed strip-sowing of bait at 0.4kg/ha (125m flight path spacing) and 0.29kg/ha (175m flight path spacing) both killed 100% of radio-collared

possums. So in this habitat type, both low bait sowing rates and wide flight path spacing still delivered very high percentage kills.

The fixed-wing aircraft sowing speed (hectares per hour flown) was about twice that for the helicopter. Consequently, fixed-wing aircraft can now be considered as an alternative to helicopters, especially for areas of more than 20,000 hectares and where suitable airstrips are available. Before fixed-wing aircraft can be seriously considered for aerial operations, operators will need to modify their aircraft to apply baits at the required low sowing rates.

### **TB freedom in the Hokonui Hills**

A key TB plan objective has been to determine the feasibility of eradicating TB from two extensive forest areas. One of these areas (Hokonui Hills in Southland) was chosen to test a novel strategic approach that could enable more rapid declaration of TB freedom in possums. This work was carried out as a collaboration between Landcare Research scientists and OSPRI operational staff.

The approach involved carrying out a pre-control trap-catch survey in which possums were also radio-collared to obtain a direct estimate of the percentage kill resulting from the subsequent aerial 1080 operation. A pre-control necropsy survey was also carried out to obtain an estimate of surveillance sensitivity, and then post-control surveys were undertaken to estimate percentage kill and possum density.

Some of the key results included:

1. The pre-control necropsy survey sampled 539 possums and provided a surveillance sensitivity of 0.108
2. The change between the pre- and post-control trap-catch index was 98.9% (i.e. an estimated 98% kill) and 84 of 88 radio-collared possums killed provided an estimated kill of 95.5%

3. The resulting probability of TB-freedom was 0.98, above the 0.95 value that is routinely accepted as sufficient to declare TB-freedom.

The results of this trial showed that TB can be eradicated from large tracts of forest and this contributed to the acceptance that TB can be eradicated from New Zealand.

### **Detection of TB in possums**

When after several years of possum control there is a belief that an area might be TB-free, a decision has to be made as to whether or not to stop control. Getting this decision right is critical, because it has significant cost implications.

A Proof-of-Freedom tool has been developed which combines a prior probability that an area is TB-free with information from possum and sentinel animal surveys. The required prior probability is generated using a Spatial Possum-TB Model (SPM) with data on the area's possum control history. A key parameter in the SPM is the TB transmission rate (i.e. the probability that an uninfected possum will get infected by an infected possum). Because of the difficulty in measuring this parameter in the field, the probability currently used in the model is generated theoretically to produce a pre-determined TB prevalence.

This project was the first attempt to measure this transmission probability directly, in a trial conducted in the Orongorongo Valley near Wellington. TB has been found in possums in the Orongorongo Valley since the 1980s and it is one of the few areas where TB possums have not been controlled, making it ideal for this research project. The researchers artificially infected a sample of possums with a strain of TB different to the local strain so newly infected possums could be identified as having been infected from the known number of artificially infected possums.



In the main trial, one experimental grid had 80 possums whose home ranges overlapped that of at least one of the experimentally infected possums, and the other had 142. Culture-confirmed TB of the unique strain was detected in three of the overlapping possums, which equated to transmission rate estimates varying from 0.0 to 0.013. Although the trial was a success, the results showed a wide variation in transmission rates, so before the empirical estimates are used in the SPM further field trials and analyses are required to determine the cause of the variation observed.

### **Detection of TB in possums by cattle**

Since July 2011, analysis of data from 1.55 million hectares has identified that there is a high probability that possums in these areas are free of TB and VRA status has been revoked. However, it is almost impossible to be certain that all possums are definitely TB free, so there remains a small chance that a TB possum-related problem will re-emerge in some areas. There is therefore a need to have some form of ongoing low-level surveillance to detect such occurrence. Because livestock are routinely tested or at least inspected for TB when eventually slaughtered, they offer a potential low-cost surveillance option. To use them for this purpose we need to know how sensitive they are at detecting TB in possums that share their range.

This project aimed to measure, for the first time, the actual rate of TB transmission from possums to cattle. It was carried out where cattle were grazed in areas known to contain infected possums, and infection was confirmed present in the possums at the start of the trial. Unfortunately, at the end of the trial, no infected possums were found and none of the cattle had become infected. Nevertheless, the initial infection along with the likely time of exposure enabled an upper 95% confidence limit

for the possum-to-cattle transmission probability of 0.29 to be calculated. This result is consistent with the assumptions being used to model livestock as sentinels of TB presence in possum populations.

### **TB pest management and the impact on NZ native birds**

Achieving cost-effective reductions of possums over large areas of forest relies on the aerial application of 1080 baits. OSPRI co-funded an extensive Department of Conservation monitoring programme that assessed the impact of repeated aerial 1080 use on native birds in extensive areas of forest in the Tararua Ranges, South Westland and the Marlborough Sounds.

Birds were counted using digital audio recorders or five-minute bird counts at five sites at which there have been 12 aerial 1080 operations since 2010. Some preliminary analysis of these counts has been undertaken which indicates a positive response to 1080 for most forest birds and no obvious long-term negative responses. The nesting success and survival of morepork, kaka, robin, rifleman, rock wren and weka were also monitored, with morepork robin, rifleman and rock wren nesting success increasing dramatically after the 1080 operations.

There was some mortality of rock wrens during the 1080 operations (this was not confirmed as a result of 1080 but most likely adverse weather conditions) but an overall net benefit for all these species. Weka were not killed by 1080 in any of the operations, nor was their nesting success affected. Their survival during the subsequent year was much higher in the 1080 treated site than it was at a nearby non-treated site. Kaka nesting success has not been analysed yet because the last few kaka that nested in South Westland in 2016, nested late and data have not been analysed.

### Whole-genome-sequencing for improved identification of the source of TB

When herds become infected with TB, OSPRI's veterinarians examine evidence of livestock movement, herd infection history and distance of herds from known wildlife infection. Alongside this they also look at the *M. bovis* strain type to determine whether infection is wildlife related, in the herd, from livestock movement, or a recurrence of residual TB. A key part of this process is knowing the strain type of the infection, and this has historically been done using REA (Restriction Enzyme Analysis).

Although REA strain typing has been very helpful in identifying potential sources of infections, it is technically very difficult to perform. Thus VNTR (variable number tandem repeats) strain typing was introduced from 2012. This was a simpler analysis to undertake, but did not have the same discriminatory power as REA. However, the advent of whole genome sequencing (WGS) of *M. bovis* provides a means of getting the highest level of discrimination, as well as the ability to measure the rate at which TB bacteria mutate.

A project built around WGS for *M. bovis* isolates provided a database of approximately 400 types from throughout New Zealand and has helped clarify possible sources of TB in newly infected herds. WGS will also help clarify the source and appropriate management options for areas such as Mt Cargill where *M. bovis* was recently found in possums and a ferret in a VFA.

Overall, the results from this extensive monitoring programme supports previous monitoring results that show native bird species benefit from possum, rat and stoat control.









# KEY PROJECTS

## DURING 2015/2016

### TB plan review

Under the Biosecurity Act, a review of the national TB plan was required to be completed by 1 July 2016. This included defining a sustainable funding arrangement that would be agreed between the Government and industry partners. The review commenced in 2015 and was overseen by a consultative committee, the Plan Governance Group (PGG) comprising representatives of funding organisations, OSPRI, and wider stakeholder interests. Consultation on the proposed changes to the TB Plan was conducted with farmers, local communities, and other stakeholders in June and July in 2015.

The new TB Plan was formally approved by Government in June 2016. The result of this process is a plan endorsed by farmers, industry and central Government that provides a nationally coordinated and long-term approach to manage and eventually eradicate TB from New Zealand.

The key objectives of the new TB Plan are the biological eradication of TB from New Zealand by 2055, with TB freedom in livestock by 2026 and 'statistical freedom' in possums (i.e. high confidence the disease is gone) by 2040.

Two important aspects of the new plan will see the introduction of more targeted approaches to TB testing and pest control. Therefore a major focus for OSPRI has been ensuring key stakeholders understand the implications of the new funding model, the key policies of the new plan and importantly the timeline for change.

### Differential slaughter and animal export levy

To support the revised TB Plan and agreed funding contributions by the dairy and beef sectors, a new differential TB slaughter levy for cattle was developed. It was agreed by industry that a new differential slaughter levy and a new live animal export levy needed to be applied to account for the required contributions on behalf of the dairy, beef and live animal export sectors.

The levy was implemented under the Biosecurity Act and collected to support funding of the TBfree programme on behalf of the beef and dairy industries. The final differential slaughter levy rates are dairy levy at \$13/head and the beef levy at \$6.3/head. The levy of \$11.50/head on live cattle and deer that are exported will be paid at the point of export.

The slaughter levy will be collected by meat processors, same as the previous slaughter levy. OSPRI was requested by industry and Government to identify options for implementation and confirmed the most viable option for industry was applying the production type to individual animal RFID tags utilizing the NAIT system. Accordingly, OSPRI undertook a project to implement the levy by mechanism of assignment of production type utilising RFID and ensuring the collection and verification of data by NAIT web interface with the meat processor.

# COLLABORATIVE INITIATIVES



OSPRI partners with its shareholders and a range of scientific, technical, industry and government agencies to achieve greater benefits through co-investment and alignment of priorities. Examples include joint research and projects on pest control methodologies, pest control operations, livestock traceability systems development and emergency animal disease response and management.

The following section highlights the key initiatives from the past year.

## **Development of an online livestock traceability tool: the electronic Animal Status Declaration**

The Animal Status Declaration (ASD) is required of all movements for designated farm animal species under the Animal Products Act 1999 for the specification for products intended for human consumption. The ASD is a statutory declaration completed by the person in charge of the animal(s) who has the knowledge and authority to answer the questions. The ASD provides critical animal attribute information related to animal health status and food safety including disease testing information e.g. Bovine TB.

The existing ASD process is paper-based, however, MPI recently identified an opportunity for an electronic ASD (eASD). There are further benefits

that can be obtained by considering an electronic approach. These include the ability to populate the forms with key demographical information, such as persons contact details, premises location, stock types and testing information.

With support from MPI, the Red Meat Profit Partnership (RMPP) and OSPRI worked together to develop the eASD Proof of Concept (POC) trial. This trial involved the development of a software platform to test the feasibility for an electronic form to replace the paper form and associated manual process. To oversee the POC trial, two key governance processes were established. The first was the eASD Governance Committee that consists of RMPP, MPI and OSPRI. The second is the eASD Stakeholder Reference Group, which is led by MPI, and comprises representation from MPI, Dairy NZ, Beef and Lamb NZ, DINZ, Federated Farmers, the Meat Industry Association and the Stock and Station Agents Association.

The POC project commenced in October 2015. Participating in this trial were three meat processor companies (Greenlea Hamilton, ANZCO Ashburton and Progressive Hastings) and 16 farmer PICAs. To date, the feedback from both PICAs and meat processors to date has been positive. However there is a need to explore potential variation in eASD application. On this basis, it was agreed that a wider pilot trial should be scoped.

## **Pest management work with regional councils**

OSPRI collaborated with regional councils for the successful implementation of the TBfree programme across the country. With changes to the way the new TB plan is funded, 2015/2016 signalled the final year that councils remain involved as a direct funder of the programme. Looking to the future, OSPRI will continue to engage with councils to identify opportunities to work with the local government sector.

## **Enhancing key TBfree data systems**

The nature of our work requires us and our contractors in the field to capture and manage extensive amounts of data. Along with NAIT, our pest control work makes significant use of data management systems. As part of our ongoing work to improve our technology we completed a project to upgrade our pest control system to ensure it complies with industry standard security requirements. As part of the project we also introduced new functionalities to further improve the vector programme's efficiency and effectiveness with better control, management and reporting capabilities.

## **Supporting Battle for our Birds campaign**

To protect our native wildlife the Department of Conservation (DOC) is seeking to continue their 'Battle for our Birds' (BFOB) pest control programme. The key objectives of the programme are to:

- Prevent any local extinction of the most vulnerable species
- Minimise predator damage to our most valuable ecosystems
- Improve efficacy and efficiency of pest management to control rodents and mustelids.

Various methods of control are utilised by DOC to control pest numbers. One of the main tools is aerial distribution of 1080 toxic bait which is well suited to New Zealand conditions for the control of a range of pests, especially possums, rats and stoats. In late 2015, OSPRI was approached by DOC to provide operational expertise to help deliver their campaign. Much of this work is scheduled for the 2016/17 financial year.

## **Streamlining the regulatory regime for pest control**

In March 2016 the Ministry for the Environment released a public discussion paper and invited submissions on proposed regulations under which resource consent from regional councils would no longer be required for aerial application of 1080 for animal pest control when carried out with the landowner's permission.

The case for exempting 1080 application from regional consent requirements under the Resource Management Act was explored in detail in a business case prepared by OSPRI, DOC, and MPI, following recommendations from the Parliamentary Commissioner for the Environment that regulations around the use of 1080 should be streamlined and simplified.

Exemption from regional consent requirements would enable simplified and nationally consistent controls on 1080 application to rest on the provisions of the Hazardous Substances and New Organisms Act, and would lead to significant efficiencies and cost savings in pest management programmes.



# CORPORATE ACTIVITIES



## HEALTH, SAFETY, SECURITY AND ENVIRONMENT

OSPRI's three-year health, safety, security and environment (HSS&E) strategy is designed to mitigate risks and to ensure that we can achieve our mission without causing harm to people or the environment. The strategic objective is a 25% reduction in workplace recordable injuries, achieved through implementing a zero-harm culture amongst OSPRI staff and contractors.

The target was achieved in 2013 (the year the strategy was implemented), so we aimed for a further 25% reduction over the remaining two years. The current strategy expires at the end of this calendar year. OSPRI will continue to review and refine the strategy to ensure that it remains fit for purpose, and continue with our vision of a healthier and safer workplace. A summary of key achievements during the year is provided below, broken down into our five priority areas for development.

### Leadership

#### Professional development

An important objective we set out to achieve was to encourage involvement of the Board and senior management in the delivery of the health and safety plan. To address this we invested in the continuing professional development of our managers and directors. In April the directors attended a special meeting on health and safety governance, presented by health and safety specialist from Deloitte and supported by Meredith Connell.

All of our managers and people leaders attended a one-day *Foundations of Safety for Managers* workshop also in April, and another two Operations Programme Managers worked hard to achieve the internationally recognised NEBOSH *International General Certificate in Occupational Health & Safety*.

#### Industry engagement

We continue to promote WorkSafe NZ's agriculture programme, through our existing connections with farmers, contractors and staff; and continued to send a representative to the Safer Farms stakeholder group meetings.

### **Encouraging safer behaviours and visible leadership**

After an initial trial in 2015 we then introduced a programme of behavioural safety observations and conversations, teaching our leaders how to address at-risk behaviour, and to recognise and reinforce safe behaviour. We capture the conversations in our Risk Manager programme, with monthly and annual Board reports now including the number of conversations as a performance indicator. Another trial was also launched to assess the impact of leaders undertaking field tours to directly engage with workers and better understand the sharp end of the business. Following excellent feedback, the programme will be extended to all operational managers, executives and directors in the next financial year.

### **Health and wellbeing**

Our wellbeing policy was endorsed by the Chief Executive in April, enabling a programme of activities to promote positive lifestyle choices, team activities, support services and mental health awareness. Complementing our health and safety policy objective to reduce injuries and illness, the wellbeing policy tackles the broad spectrum of matters that can affect employee wellness.

### **Competency and training**

We have worked closely with industry training organisations and providers to improve course content. We provided advice to the Primary Industry Training Organisation for the development of the New Zealand Certificate in Pest Operations (Level 3) to ensure it reflects current best practice and includes our most recent health and safety initiatives.

#### **Vehicle training**

Continuing our focus on vehicle operation as a high-risk activity, we introduced a requirement for three-yearly revalidation of quad bike, motorcycle and side-by-side vehicle training. This ensures that skills and knowledge are updated with improvements in technology and

techniques, and will help prevent the gradual development of unsafe habits.

Operating light four wheel drives on-road presents the highest danger to workers. Depending on the frequency and nature of their driving duties, all of our staff drivers completed on-job, online and/or in-car driver training. We were pleased to see that the overall potential for vehicle accidents reduced compared to the previous year, especially in relation to passenger vehicles. We also noted a second consecutive drop in both the actual and potential harm caused by quad bikes, the result of a sustained quad bike safety campaign.

#### **First aid**

Taking into account feedback that workplace first aid courses were not entirely relevant to our work, we worked with the New Zealand Red Cross to develop a first aid revalidation course that specifically addresses the needs of rural, remote and lone workers. The course is now available to the public, and was recently acknowledged by WorkSafe as a good initiative to help manage the risks faced by workers in the agricultural sector.

Our field first aid factsheet, setting out considerations for our most common injuries and hazards, including recommendations for individual kit contents, attracted interest from media and first aid specialists in New Zealand and Australia. The factsheet and our training policy set higher standards of comprehensive first aid training for field workers.

All of our field operations staff attended specialist outdoor first aid courses, where they learned enhanced skills for managing major trauma and providing extended care in a remote environment.

### **Field contractor safety**

OSPRI has a strong focus on working collaboratively with contractors on health and safety, recognising the obligations of both parties in a contractual relationship and the desirability of working together to achieve the objectives of policies and procedures.

### Remote worker survey

A sample of our field staff and contractors took part in an international survey undertaken by the University of East Anglia (UK) and sponsored by the Institution of Occupational Safety and Health. The survey aimed to explore how occupational safety and health can be successfully managed among remote workers and how the leadership behaviours of leaders can help promote safe and healthy work. The survey findings noted that OSPRI leaders are especially good at leading by example and in building good relationships with workers; and that leaders could focus on discussing the objectives of safety as much as the requirements.

### Contractor health and safety forum

Recognising that our health and safety journey would go nowhere without the support of our contracted work force, OSPRI implemented the pest management contractor safety forum in 2014 to provide a vehicle for consultation on health and safety initiatives and requirements. In April 2016 we invited on-farm TB testing organisations to join the forum, which now has members from 15 different companies.

## Risk management systems

### Health and safety risk

Over the past year we have conducted both internal and external checks that our systems and practices continue to meet the requirements of our ACC Workplace Safety Management Practices certification; and we reviewed the fitness-for-purpose and impact of the HSSE strategy in order to confirm the future direction of OSPRI health and safety.

Now in our third year of using the *Risk Manager* software, we are able to build a quantified idea of the most common sources of actual harm. The growing depth of data and the power to better analyse it, coupled with consultation with contractors and staff about potential harm and the

effectiveness of controls, allowed us to refine or confirm the top five critical risks:

#### 1. Working alone or in remote locations

People may urgently need help, but find themselves unable to easily get assistance, compounding the impact of an event.

#### 2. Operating a vehicle

Vehicle accidents are a leading cause of death in NZ. One in five serious injuries to OSPRI workers directly involves a vehicle.

#### 3. Working outside

Exposure to natural environmental conditions such as cold, dust and UV can cause immediate or long-term illness, or death.

#### 4. Working with or near other people (third parties)

We often work in other people's workplaces or public places. Often that involves simultaneous operations, i.e. conflicting uses of the same place at the same time. Without good planning and communication, one party transfers risk to another.

#### 5. Working at or near heights

Falls were the cause of a quarter of all traumatic deaths nationally in 2012, and account for the same proportion of our most serious injuries.

### Security risk

We began a programme of work to align our security risk management with the New Zealand Government protective security requirements (PSR), and the international standard ISO31000:2009. Front-line staff attended workshops about personal security awareness and conflict management.

### Environmental risk

We undertook external audits of the procedural correctness of several aerial operations, and an environmental policy statement was compiled for inclusion in our next three-year strategy.



## MARKETING AND COMMUNICATIONS

During the year, we focused on improving communication and engagement across our work, including building greater awareness of the TBfree and NAIT programmes and sharing our knowledge and expertise.

### Supporting our team in the field

We have continued to produce a wide range of collateral for dissemination at events, presentations and information evenings. Communications for aerial operations have been developed including operation specific factsheets and signage, factsheets to help landowners understand how we use 1080 and direct mail, public notices and social media support for information sessions.

### Social media

This year we've grown our social media outlets to increase our reach to farmers and allowing our messages to be more effective. Since last year we've had a 390% increase in Facebook likes and our Twitter followers are gradually growing. Farmer engagement is increasing steadily and Facebook is proving a valuable tool to provide timely messages.

### OSPRI enews

This year we focused on opening up a direct line of communication with farmers in the form of a fortnightly OSPRI enews. These 42 emails have gone out to over 880,000 (297,650 opens) farmers and shareholders. Several have been targeted at specific regions or farm production type, and the rest reflect events in the farming calendar, allowing us to communicate strategic messages to our key audiences.

### Promoting our expertise

To help share OSPRI's capabilities and wide knowledge base we initiated the development of an online library of factsheets. The factsheets cover all aspects of OSPRI's programmes and operations, and detail the science and field-research based behind OSPRI's programmes. They support OSPRI's consultation with communities affected by TB management and wildlife control operations.

They also serve as a useful content source for generating media coverage to highlight our work. For example, a health and safety emergency in Southland concerning an OSPRI pest control contractor's near-death encounter with a swarm of wasps in early 2016 was a compelling and widely covered news story. Its coverage enabled OSPRI to communicate best-practice safety guidance and link the audience with online access to its factsheet library. Work on this project will continue for the coming year.

### New OSPRI website

Work has begun on developing an integrated website for OSPRI, NAIT and TBfree. Using stakeholder research from previous years, we have identified areas for improvement and are incorporating them into the new site structure. The new site will provide a one-stop-shop for our stakeholders and contractors, making it easier for them to access to the information they need. The expected launch of the new site will be in early 2017.

# FINANCIAL STATEMENTS

Governance	63
Remuneration Report	66
Statutory Disclosures	68
Consolidated Group Financial Statements	72
Notes to the Financial Statements	76
Independent Auditor's Report	94

# GOVERNANCE

The OSPRI Board of Directors (the OSPRI Board) is responsible for and committed to maintaining the highest standards of corporate governance, ensuring transparency and accountability to shareholders and stakeholders.

## Nomination and appointment of directors and the Chief Executive

Procedures for the appointment and removal of directors are governed by the company's constitution.

The major shareholders, DairyNZ and Beef + Lamb, are each entitled to appoint one director. The Crown currently does not hold shares and therefore is not eligible to appoint a director.

The Stakeholders' Council identifies and nominates candidates to fill up to five director positions for the approval by shareholders. The maximum term for which a director may be appointed is three years. A director is eligible for re-appointment or re-election after the expiry of his or her term of appointment.

OSPRI New Zealand Limited has appointed directors to the boards of each of the two subsidiaries, TBfree New Zealand Limited, and National Animal Identification and Tracing (NAIT) Limited.

## Director changes

Fenton Wilson was appointed as a new director of OSPRI New Zealand Limited by shareholders at the AGM in October 2015, and was appointed as director of TBfree New Zealand Limited and National Animal Identification and Tracing (NAIT) Limited by the OSPRI Board in October 2015.

Ted Coats completed his directorship of OSPRI New Zealand Limited at the AGM in October 2015 and subsequently ceased to be a director of TBfree New Zealand Limited and National Animal Identification and Tracing (NAIT) Limited at that time.

Keith Sutton resigned as a director after the end of the period on 1 July 2016.



## Board committees

The Board has established the following committees to examine proposals and make recommendations.

### Audit and Risk Committee

The committee consists of at least three board members. Collectively, people appointed to the audit and risk committee need to have:

- financial expertise;
- knowledge of governance, assurance, and risk management best practice;
- other attributes as deemed appropriate (for example, legal or information technology experience).

The Chairman of the committee shall not be the Chairman of the OSPRI New Zealand Board. The membership shall be for one year and shall provide for both continuity of membership and contribution of fresh perspectives. The committee undertakes the following:

- liaison with internal and external auditors;
- review of annual audit plan, for both internal and external audit functions;
- review of audit findings and consequential actions;
- review of monthly, six-monthly and annual financial statements;
- prior approval and clearance of financial statements in reports, public releases or media;
- review of the quality and integrity of financial reporting
- review of accounting policies, procedures, and other governance, legislative and statutory compliance processes;
- supervision of any special investigations requested by the Board;
- oversight of the risk management system for the Company;
- adequacy of the internal control system for financial reporting integrity.

### Human Resources Committee

The objective of the committee is to assist the board in setting policy and standards for employees relating to remuneration, and employment. The committee also oversees the OSPRI Director Mentoring Programme.

### Board and committee meetings

The Board normally meets at least 10 times a year and/or whenever necessary to deal with specific matters. The table below documents the directors' board attendance and committee members' attendance at meetings during the year ending 30 June 2016.

	Board	AR Committee	HR Committee
Jeff Grant	12	1	2
Lesley Campbell	12	1	2
Ted Coats (Retired Oct 2015)	5	1	1
Barry Harris	9	2	
Keith Sutton	10	3	
Deborah Roche	9	2	
Fenton Wilson (appointed Oct 2015)	5		1



**Jeff Grant**  
Chair



**Lesley Campbell**  
Director



**Barry Harris**  
Director



**Deborah Roche**  
Director



**Keith Sutton**  
Director



**Fenton Wilson**  
Director



**Michelle Edge**  
Chief Executive



**Matthew Hall**  
Chief Operating Officer



**Stu Hutchings**  
Group Manager, Programme Design, and Partnerships Company Secretary



**Kayo Sakey**  
Group Manager, Strategy Development and Innovation

The audit and risk committee comprised Keith Sutton (Chair), Barry Harris, Fenton Wilson and Deborah Roche.  
The human resources committee comprised Lesley Campbell (Chair), Jeff Grant and Fenton Wilson.  
The chairman of the Board is an ex-officio member of all committees of the Board.

# REMUNERATION REPORT

## Directors' remuneration

### Directors' fees

These fees have been applied for the year from 1 July to 30 June.

Position	2015/16	2014/15
Chairman	\$70,000	\$70,000
Director	\$35,000	\$35,000
Committee Chair	\$4,000	\$4,000

### Remuneration details of directors

Details of the total remuneration and the value of other benefits received by each OSPRI director for the 2016 financial year are as follows. Directors' fees exclude GST where appropriate. In addition, Board members are entitled to be reimbursed for costs directly associated with carrying out their duties, including travel costs. Some Board members are appointed to the NAIT Data Access Panel and remunerated for their time spent.

Details of the Board's approval of director remuneration has been entered into OSPRI's interests register.

Director	Position	2015/16		2014/15
		Fees	NAIT Data Access Panel	Fees
J Grant	Chairman	\$70,000	–	\$70,000
E Coats*	Director	\$11,667	\$1,500	\$35,000
L Campbell	Director	\$39,000	\$3,231	\$39,000
B Harris	Director	\$35,000	\$4,731	\$35,000
K Sutton	Director	\$39,000	\$4,731	\$39,000
F Wilson**	Director	\$23,333	–	–
<b>Total</b>		<b>\$218,000</b>	<b>\$14,193</b>	<b>\$218,000</b>

\*Denotes a director who retired during the period.

\*\*Denotes a director who was appointed during the period.

Deborah Roche is a director of OSPRI but receives remuneration and benefits solely as an employee of the Ministry for Primary Industries. She receives no remuneration or benefits from OSPRI.



## Employee remuneration

The table below shows the number of OSPRI employees who received remuneration and other contracted benefits (including redundancy or termination payments) during FY2016 of at least \$100,000.

The remuneration figures analysed include all monetary payments actually paid during the course of FY2016 whether in respect of FY2016 or other periods.

Remuneration bands	# employees 2015/16	# employees 2014/15
\$100,000 - \$109,999	9	5
\$110,000 - \$119,999	5	5
\$120,000 - \$129,999	9	4
\$130,000 - \$139,999	4	4
\$140,000 - \$149,999	3	5
\$150,000 - \$159,999	1	2
\$160,000 - \$169,999	3	
\$170,000 - \$179,999	3	2
\$180,000 - \$189,999		1
\$200,000 - \$209,999		1
\$210,000 - \$219,999		1
\$220,000 - \$229,999	1	
\$230,000 - \$239,999	1	1
\$260,000 - \$269,999		1
\$270,000 - \$279,999		1
\$290,000 - \$299,999	1	
\$330,000 - \$339,999	2	
\$770,000 - \$779,999		1
<b>Total</b>	<b>42</b>	<b>34</b>

Neither NAIT nor TBfree have any employees.

## Auditors remuneration

KPMG was appointed auditors of OSPRI group. The following amounts were paid to the auditors of OSPRI and its subsidiaries during the year.

Auditor	Work Undertaken	2015/16	2014/15
KPMG	For Audit Work	\$35,000	\$35,000
KPMG	For Other Work	\$20,000	\$57,445

Neither NAIT or TBfree made any payments to its auditors (whether for audit work or otherwise) during the period.

# STATUTORY DISCLOSURES

## Disclosures of interests by directors

The following are particulars of general disclosures of interest by directors holding office as at 30 June 2016, pursuant to section 140(2) of the Companies Act 1993. Each such director will be regarded as interested in all transactions between OSPRI and the disclosed entity.

### J J Grant

AgResearch Ltd	Director
Copper Valley Holdings Limited	Director/Shareholder
DNG Holdings Limited	Director/Shareholder
Finance Now Limited	Director
Milford Sound Development Authority	Chairman
Mt Linton Station	Chairman
National Animal Identification and Tracing (NAIT) Limited	Chairman
New Zealand Young Farmers	Director
SBS Bank	Director
TBfree New Zealand Limited	Chairman
The Plantations	Partner/Owner
Tower Hill Trust	Partner/Trustee
Southern Institute of Technology	Director

### L A Campbell

FishServe Innovations NZ Ltd	Director
National Animal Identification and Tracing (NAIT) Limited	Director
Seafood Innovations Ltd	Director
Seafood Standards Council	Chair
TBfree New Zealand Limited	Director

### B S Harris

AgResearch Ltd	Deputy Chairman
Agricultural Service Ltd (ASL)	Chairman
DairyNZ Ltd	Director
Food Innovation Waikato	Chairman
McFall Fuels Ltd	Chairman
National Animal Identification and Tracing (NAIT) Limited	Director
New Zealand Food Innovation Network	Director
Primary ITO	Director
TBfree New Zealand Limited	Director
WEL Networks Ltd	Director

### D J Roche

Ministry for Primary Industries	DDG Policy and Trade
Finroc Limited	Director/Shareholder
National Animal Identification and Tracing (NAIT) Limited	Director
TBfree New Zealand Limited	Director

**K G Sutton**

Antipodean Lands Limited	Director
Bangor Farm Limited	Shareholder/Director
Bangor Park Limited	Shareholder/Director
Gisborne Rural Trustee Limited	Director
Gough Group Limited	Director
Maori Trustee Advisory Board	Member
Moanui Farm Limited	Director
National Animal Identification and Tracing (NAIT) Limited	Director
Rangatira Forests Limited	Shareholder/Director
Run 351 Limited	Shareholder/Director
Rural Livestock Limited	Director
Sutton McCarthy Limited	Shareholder/Director
Taranaki Investment Management Ltd	Chairman
Tasman Farms Limited and related entities	Chairman
TBfree New Zealand Limited	Director
Te Hau Station Limited	Director
Te Tarake Forests Limited	Shareholder/Director
The Van Diemen's Land Company	Governor
Waitangi Falls Trust	Trustee
Wellington International Airport Ltd	Director
Wools of New Zealand Ltd	Director

**F D Wilson**

AH Gordon Trust	Trustee
Gary Wilson Family Trust	Trustee
Hawke's Bay Civil Defence Joint Committee	Chairman
Hawke's Bay Regional Council	Chairman
Local Government New Zealand	National Council member
National Animal Identification and Tracing (NAIT) Limited	Director
Oruru Land Company Ltd	Shareholder/Director
Smedley Station Advisory Board	Member
St Veda's Trust	Trustee
TBfree New Zealand Limited	Director
Wairoa Community Development Trust	Chairman



## Indemnity and insurance

In accordance with section 162 of the Companies Act 1993 and the constitution of the company, OSPRI has continued to indemnify and insure its directors and officers, including directors of subsidiary and associated companies, against potential liability or costs incurred in any proceeding, excluding actions for gross negligence, criminal liability, breach of fiduciary duty or breach of directors' duties.

Details of the Board's approval of this indemnity and insurance have been disclosed in OSPRI's interests register.

## Donations

No company in the OSPRI Group made donations in the 2015-2016 year.

## Subsidiary company directors

NAIT and TBfree had the same directors as OSPRI as at 30 June 2016, and experienced the same changes to its directors during the period. None of NAIT's or TBfree's directors are paid any fees for their role as directors of those companies. However, the cost of fees paid by OSPRI to its directors are allocated across the OSPRI Group. Also, each general disclosure of an interest by a director of OSPRI on pages 20 or 21 of this Annual Report have also been disclosed by each director in NAIT's and TBfree's interest register (except where that general disclosure relates to the subsidiary in question).

## Subsidiaries

The Group has the following subsidiaries:

Name	Holding	Principal Activity	Charity #
National Animal Identification and Tracing (NAIT) Ltd	100%	Implementing and maintaining the animal identification and tracing scheme	CC47735
TBfree New Zealand Ltd	100%	Implementation of the National Pest Management Plan for Bovine Tuberculosis	CC49248

Neither subsidiary is equity accounted as they are charitable entities. OSPRI will not receive any future tangible financial benefit from either subsidiary nor will OSPRI be entitled to any distributions on winding up.

## Other Interests

Except where an interest has been disclosed elsewhere in this Annual Report, no entry has been made in any of OSPRI's, NAIT, or TBfree's interest register during the period.

## Stakeholder Council

The stakeholder's council performs the functions required of it by the constitution.

Its obligations are:

- Approve the appointment or election of directors
- Recommend annual board remuneration
- Convey the stakeholders view to the Board
- Review and comment on the groups long term strategies, the annual budget and business plan, the half year and annual reports
- Consult on new funding and business opportunities and other specific projects that warrant consideration of the Board.
- Consider and consult on constitution changes

The Stakeholders' Council representatives during 2015/16 were:

Stakeholder	Representative
Beef + Lamb New Zealand	Andy Fox
Dairy Companies Association of New Zealand	Kevin Old
DairyNZ	Jim van der Poel
Deer Industry New Zealand	Dan Coup
Federated Farmers Dairy	Katie Milne
Federated Farmers Meat and Fibre	Anders Crofoot (Chairman)
Local Government New Zealand	Andrew Robb
Meat Industry Association of New Zealand	Tim Ritchie
Ministry for Primary Industries	Matthew Stone
New Zealand Deer Farmers' Association	Paddy Boyd
New Zealand Stock and Station Agents' Association	Andrew Clark (resigned April 2016)
New Zealand Stock and Station Agents' Association	Terry Cairns (appointed April 2016)

# CONSOLIDATED GROUP FINANCIAL STATEMENTS

## CONSOLIDATED STATEMENT OF COMPREHENSIVE REVENUE AND EXPENSE

For the year ended 30 June 2016

<i>In thousands of New Zealand Dollars</i>	<b>Note</b>	<b>2016</b>	<b>2015 Restated</b>
<b>Revenue</b>			
Revenue from non-exchange transactions	7	88,437	91,658
Revenue from exchange transactions		440	279
<b>Total revenue</b>		<b>88,877</b>	<b>91,937</b>
<b>Expenditure</b>			
NAIT operations		3,232	3,832
Contact centre and compliance		1,914	2,181
Pest control and management		49,920	53,276
Disease management and testing		14,219	16,417
Research		2,040	2,383
Business service support		9,110	10,794
<b>Total expenditure</b>	8	<b>80,435</b>	<b>88,883</b>
Surplus before financing costs		8,442	3,054
Interest income		237	395
<b>Net finance costs</b>		<b>237</b>	<b>395</b>
Surplus for the year		8,679	3,449
Total comprehensive revenue and expense for the year		8,679	3,449

The notes are an integral part of these financial statements.

## CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

For the year ended 30 June 2016

<i>In thousands of New Zealand Dollars</i>	Note	Contributed capital	Retained earnings	NAIT reserve	Beef industry reserve	Dairy industry reserve	Deer industry reserve	Total equity
Balance at 1 July 2014 (restated)	20	-	5,438	5,908	2,518	748	542	15,154
<b>Changes in equity for 2015</b>								
Total comprehensive revenue and expense for the year		-	3,449	-	-	-	-	3,449
Transfers between reserves	12	-	(2,888)	(989)	2,403	1,497	(23)	-
<b>Balance at 30 June 2015 (restated)</b>	20	-	<b>5,999</b>	<b>4,919</b>	<b>4,921</b>	<b>2,245</b>	<b>519</b>	<b>18,603</b>
<b>Changes in equity for 2016</b>								
Total comprehensive revenue and expense for the year		-	310	-	4,617	4,177	(425)	8,679
Transfers between reserves		-	(955)	955				-
<b>Balance at 30 June 2016</b>		-	<b>5,354</b>	<b>5,874</b>	<b>9,538</b>	<b>6,422</b>	<b>94</b>	<b>27,282</b>

The notes are an integral part of these financial statements.



## CONSOLIDATED STATEMENT OF FINANCIAL POSITION

For the year ended 30 June 2016

<i>In thousands of New Zealand Dollars</i>	Note	2016	2015 Restated
<b>Assets</b>			
Cash and cash equivalents		21,260	12,833
Receivables and other current assets	9	5,875	6,687
<b>Current assets</b>		27,135	19,520
Property, plant and equipment		1,035	1,391
Intangible assets	10	8,982	8,900
<b>Non-current assets</b>		10,017	10,291
<b>Total assets</b>		37,152	29,811
<b>Liabilities</b>			
Payables from exchange transactions and other liabilities		8,533	10,791
Revenue received in advance	11	1,337	417
<b>Current liabilities</b>		9,870	11,208
<b>Total liabilities</b>		9,870	11,208
<b>Equity</b>			
Retained earnings		5,354	5,999
Reserves	12	21,928	12,604
<b>Total equity</b>		27,282	18,603
<b>Total equity and liabilities</b>		37,152	29,811

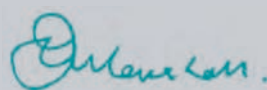
## APPROVAL BY THE DIRECTORS

The Financial Statements were authorised on behalf of the OSPRI Board of Directors on 18 August 2016:



**J J Grant**

Chair of the Board



**I C Marshall**

Chair of the Audit and Risk Committee

The notes are an integral part of these financial statements.

## CONSOLIDATED STATEMENT OF CASH FLOWS

*For the year ended 30 June 2016*

<i>In thousands of New Zealand Dollars</i>	Note	2016	2015 Restated
<b>Cash flows from operating activities</b>			
Revenue from operations		89,871	93,498
Cash paid to employees and suppliers		(79,756)	(89,916)
<b>Net cash from/(used in) operating activities</b>	15	<b>10,115</b>	<b>3,582</b>
<b>Cash flows from investing activities</b>			
Proceeds from maturing term deposits		-	5,545
Interest income		237	276
Purchase of property, plant and equipment		(39)	(119)
Purchase of intangible assets		(1,886)	(2,301)
Investment in term deposits		-	(2,045)
<b>Net cash from/(used in) investing activities</b>		<b>(1,688)</b>	<b>1,356</b>
<b>Net increase in cash and cash equivalents</b>		<b>8,427</b>	<b>4,938</b>
Cash and cash equivalents at 1 July		12,833	7,895
<b>Cash and cash equivalents at 30 June</b>		<b>21,260</b>	<b>12,833</b>

*The notes are an integral part of these financial statements.*

# NOTES TO THE FINANCIAL STATEMENTS

Note	Page
1. Reporting entity	77
2. Basis of preparation	77
3. Use of estimates and judgements	78
4. Significant accounting policies	78
5. New standards and interpretations not yet adopted	79
6. Segment information	79
7. Revenue from non-exchange transactions	83
8. Expenditure	84
9. Receivables and other current assets	84
10. Intangible assets	85
11. Revenue received in advance	86
12. Capital and reserves	87
13. Financial instruments	87
14. Related parties	89
15. Reconciliation of net cash flows from operating activities to surplus/(deficit)	90
16. Operating leases as lessee	91
17. Commitments	91
18. Contingent liabilities	91
19. Subsequent events	91
20. Transition to PBE Standards	92

## Note 1: Reporting entity

OSPRI New Zealand Limited ('OSPRI' or the 'Company') is a charity domiciled in New Zealand and registered under the Charities Act 2005. The consolidated financial statements have been prepared in accordance with the requirements of that Act. The registered office of OSPRI is located on Level 9, CallActive House, 15 Willeston Street, Wellington 6011.

These consolidated financial statements for the year ended 30 June 2016 comprise the controlling entity OSPRI and its two subsidiaries TBFree New Zealand Limited ('TBFree') and National Animal Identification and Tracing (NAIT) Limited ('NAIT'), together referred to as the 'Group'. For the purposes of financial reporting, OSPRI and the Group are designated as not-for-profit public benefit entities.

OSPRI was incorporated on the 6 June 2013 and the Group was formed upon the acquisition of TBFree and NAIT. All entities with the Group are domiciled in New Zealand and are registered under the Companies Act 1993. TBFree manages the National Pest Management Plan (NPMP) for Bovine Tuberculosis in accordance with the provisions of the Biosecurity Act 1993. NAIT is responsible for implementing New Zealand's National Animal Identification and Tracing Scheme and operates under the National Animal Identification and Tracing Act 2012.

## Note 2: Basis of preparation

### (a) Statement of compliance

The consolidated financial statements have been prepared in accordance with and comply with New Zealand Generally Accepted Accounting practice (NZ GAAP). They comply with Tier 1 PBE Accounting Standards (Not-For-Profit) (PBE).

These consolidated financial statements are the first financial statements presented in accordance with Tier 1 PBE Accounting Standards and PBE FRS 46 First-time Adoption of PBE Standards by Entities Previously Applying NZ IFRSs has been applied. An explanation of how the transition to Tier 1 PBE Accounting Standards has affected the reported financial position, financial performance and cash flows of the Group is provided in Note 20.

The consolidated financial statements were authorised for issue by the Board of Directors on 18 August 2016.

### (b) Basis of measurement

The consolidated financial statements have been prepared on the historical cost basis and on an accrual basis.

### (c) Functional and presentation currency

The financial statements are presented in New Zealand dollars, which is the functional and reporting currency of the Group and all values are rounded to the nearest thousand (\$000) except where indicated otherwise.



### Note 3: Use of estimates and judgements

The preparation of the financial statements in conformity with NZ GAAP Standards requires management to make judgements, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimates are revised and in any future periods affected.

#### (a) Judgements

Information about judgements made in applying accounting policies that have the most significant effects on the amounts recognised in the financial statements is included in the following notes:

- Note 10 – capitalisation of internally generated software

#### (b) Assumptions and estimation uncertainties

Information about assumptions and estimation uncertainties that have a significant risk of resulting in a material adjustment in the year ending 30 June 2016 is included in the following notes:

- Note 10 – assessment of useful lives and residual values
- Note 10 – impairment of non-financial assets – non-cash generating assets

### Note 4: Significant accounting policies

The accounting policies set out below and in the notes to the consolidated financial statements have been applied consistently to all periods presented in these financial statements, and have been applied consistently by the Group. Reference should be made to Note 20 which details the transition adjustments required to move the Group from accounting policies based on New Zealand Equivalents to International Financial Reporting Standards as applicable to PBEs [NZ IFRS (PBE)] to Tier 1 PBE Accounting Standards (Not-For-Profit). All comparatives have been restated.

#### (a) Income tax

OSPRI and its subsidiaries are registered as charitable entities with the Charities Services and are therefore exempt from income tax on normal operations.

#### (b) Good and Services Tax

The Consolidated Statement of Comprehensive Revenue and Expenses has been prepared so that all components are stated exclusive of GST. All items in the Consolidated Statement of Financial Position are stated net of GST, with the exception of receivables and payables, which include GST invoiced.

#### (c) Impairment of non-financial assets

The Group has determined that all property, plant and equipment and intangible assets are non-cash generating assets, as they are held to provide activities and services that benefit biosecurity and industry good in New Zealand, rather than for a commercial return.

##### *Impairment of non-cash-generating assets*

The Group assesses at each reporting date whether there is an indication that a non-cash-generating asset may be impaired. If any indication exists, or when annual impairment testing for an asset is required, the Group estimates the asset's recoverable service amount. An asset's recoverable service amount is the higher of the non-cash generating asset's fair value less costs to sell and its value in use.

Where the carrying amount of an asset exceeds its recoverable service amount, the asset is considered impaired and is written down to its recoverable service amount. Impairment losses are recognised in the Consolidated Statement of Comprehensive Revenue and Expenses.

**(d) Impairment of financial assets**

The Group's financial assets are classified as loans and receivables and are assessed at each reporting date to determine whether there is objective evidence that they are impaired. Objective evidence that financial assets are impaired includes default or delinquency by the counterparty. The Group considers evidence of impairment for financial assets measured at amortised costs at a specific level. An impairment loss is calculated as the difference between its carrying amount and the present value of the estimated future cash flows discounted at the asset's original effective interest rate. Losses are recognised in surplus and deficit and reflected in an allowance account against the financial asset. When an event occurring after the impairment causes the impairment loss to be reduced, the decrease in impairment loss is reversed through surplus and deficit.

**Note 5: New standards and interpretations not yet adopted**

The Group has elected to early adopt Disclosure Initiative (Amendments to PBE IPSAS 1), issued in July 2015, that apply for reporting periods beginning on or after 1 January 2016. There are no other new standards, amendments to standards and interpretations that have been issued but are not yet effective that are applicable to the Group for the year ended 30 June 2016.

**Note 6: Segment information**

The Group is organised and reports to its directors on the basis of three functional areas: OSPRI New Zealand Limited (OSPRI) and both subsidiaries, National Animal Identification and Tracing Limited (NAIT) and TBFree New Zealand Limited (TBFree).

Inter-segment allocations – segment expenses include expenses arising from business support services provided by OSPRI to its subsidiaries. These transfers are accounted for at cost and are eliminated on consolidation. The total amount charged for these services was \$1 million (2015: \$1 million).

## Operating statement segment information

### 2016

<i>In thousands of New Zealand Dollars</i>	<b>OSPRI</b>	<b>NAIT</b>	<b>TBFree</b>	<b>Elimination of inter-segment transactions</b>	<b>Group</b>
<b>Operating income</b>					
Crown revenue	-	2,228	29,149	-	31,377
Slaughter levies	-	2,265	30,247	-	32,512
Tag levies	-	3,326	-	-	3,326
Industry and regional funding	-	-	21,204	-	21,204
TB animal reactor proceeds	-	-	18	-	18
Other income	1,440	-	-	(1,000)	440
<b>Total operating income</b>	<b>1,440</b>	<b>7,819</b>	<b>80,618</b>	<b>1,000</b>	<b>88,877</b>
<b>Operating expenditure</b>					
Disease management and testing	-	-	14,217	-	14,217
Research	-	-	2,040	-	2,040
NAIT operations	-	3,232	-	-	3,232
Contact centre and compliance	-	927	987	-	1,914
Pest control and management	-	-	49,921	-	49,921
Business service support	986	3,894	5,230	(1,000)	9,110
<b>Total operating expenditure</b>	<b>986</b>	<b>8,053</b>	<b>72,395</b>	<b>1,000</b>	<b>80,434</b>
<b>Net operating surplus/(deficit) for the year</b>	<b>454</b>	<b>(234)</b>	<b>8,223</b>	<b>-</b>	<b>8,443</b>
<b>Interest income</b>	<b>2</b>	<b>89</b>	<b>145</b>	<b>-</b>	<b>236</b>
<b>Total comprehensive revenue and expense for the year</b>	<b>456</b>	<b>(145)</b>	<b>8,368</b>	<b>-</b>	<b>8,679</b>

**2015 (Restated)**

<i>In thousands of New Zealand Dollars</i>	<b>OSPRI</b>	<b>NAIT</b>	<b>TBFree</b>	<b>Elimination of inter-segment transactions</b>	<b>Group</b>
<b>Operating income</b>					
Crown revenue	-	2,140	30,201	-	32,341
Slaughter levies	-	2,527	29,798	-	32,325
Tag levies	-	3,749	-	-	3,749
Industry and regional funding	-	35	23,105	-	23,140
Fees and recoveries	-	6	-	-	6
TB animal reactor proceeds	-	-	97	-	97
Other income	1,000	-	279	(1,000)	279
<b>Total operating income</b>	<b>1,000</b>	<b>8,457</b>	<b>83,480</b>	<b>1,000</b>	<b>91,937</b>
<b>Operating expenditure</b>					
Disease management and testing	-	-	16,417	-	16,417
Research	-	-	2,383	-	2,383
NAIT operations	-	3,832	-	-	3,832
Contact centre and compliance	-	1,025	1,156	-	2,181
Pest control and management	-	-	53,275	-	53,275
Business service support	940	4,649	6,206	(1,000)	10,795
<b>Total operating expenditure</b>	<b>940</b>	<b>9,506</b>	<b>79,437</b>	<b>(1,000)</b>	<b>88,883</b>
<b>Surplus/(deficit) before financing costs</b>	<b>60</b>	<b>(1,049)</b>	<b>4,043</b>	<b>-</b>	<b>3,054</b>
<b>Interest income</b>	<b>3</b>	<b>202</b>	<b>190</b>	<b>-</b>	<b>395</b>
<b>Total comprehensive revenue and expense for the year</b>	<b>63</b>	<b>(847)</b>	<b>4,233</b>	<b>-</b>	<b>3,449</b>



## Balance sheet segment information

### 2016

<i>In thousands of New Zealand Dollars</i>	OSPRI	NAIT	TBFree	Elimination of inter-segment transactions	Group
Non-current assets	1,322	4,378	4,317	-	10,017
Current assets	646	9,304	23,486	(6,301)	27,135
<b>Total assets</b>	<b>1,968</b>	<b>13,682</b>	<b>27,803</b>	<b>(6,301)</b>	<b>37,152</b>
Current liabilities	1,479	3,976	10,715	(6,301)	9,869
<b>Total liabilities</b>	<b>1,479</b>	<b>3,976</b>	<b>10,715</b>	<b>(6,301)</b>	<b>9,869</b>
Retained earnings and reserves	33	9,851	8,719	-	18,603
Surplus/(deficit) for the year	456	(145)	8,368	-	8,679
<b>Total equity</b>	<b>489</b>	<b>9,706</b>	<b>17,087</b>	<b>-</b>	<b>27,282</b>

### 2015 (Restated)

<i>In thousands of New Zealand Dollars</i>	OSPRI	NAIT	TBFree	Elimination of inter-segment transactions	Group
Non-current assets	1,278	4,853	4,160	-	10,291
Current assets	495	6,265	13,863	(1,101)	19,522
<b>Total assets</b>	<b>1,773</b>	<b>11,118</b>	<b>18,023</b>	<b>(1,101)</b>	<b>29,813</b>
Current liabilities	1,740	1,267	9,303	(1,101)	11,209
<b>Total liabilities</b>	<b>1,740</b>	<b>1,267</b>	<b>9,303</b>	<b>(1,101)</b>	<b>11,209</b>
Retained earnings and reserves	(30)	10,698	4,486	-	15,154
Surplus/(deficit) for the year	63	(847)	4,233	-	3,449
<b>Total equity</b>	<b>33</b>	<b>9,851</b>	<b>8,719</b>	<b>-</b>	<b>18,603</b>

## Note 7: Revenue from non-exchange transactions

<i>In thousands of New Zealand Dollars</i>	Note	2016	2015 Restated
Crown funding		31,377	32,341
Industry and Regional Council funding		21,204	23,140
Slaughter levies		32,512	32,325
TB animal reactor proceeds and other		18	103
Tag levies		3,326	3,749
<b>Total revenue from non-exchange transactions</b>	<b>20</b>	<b>88,437</b>	<b>91,658</b>

### Policies

Non-exchange transactions are those where the Group receives value from another entity (e.g. cash funding) without giving approximately equal value to that entity in exchange. Funding received from non-exchange transactions is recognised as non-exchange revenue, to the extent that a liability is not recognised in respect to the same funding received. Liabilities are recognised in relation to funding received when there is a resulting present obligation to perform to satisfy a condition (or milestone), and the failure of which will result in the refund of any funding that have been received in relation to the specified condition (or milestone).

The following are the recognition criteria in relation to the Group's non-exchange transactions.

#### (a) Crown, Industry and Regional Councils funding

The recognition of non-exchange revenue from Crown, Industry and Regional funding depends on whether the funding comes with any stipulations imposed on the use of funds provided.

Stipulations that are 'conditions' specifically require the entity within the Group to return the funds received if they are not used in the way stipulated, resulting in the recognition of a liability that is subsequently recognised as non-exchange revenue as and when the 'conditions' are satisfied. Stipulations that are 'restrictions' do not specifically require the entity or the Group to return the funds received if they are not utilised in the way stipulated, and therefore do not result in the recognition of a non-exchange liability, which results in the immediate recognition of non-exchange revenue when the funds are receivable or received.

TBFree and NAIT receive funding from the Crown. The funding is provided to enable the entities to carry out their National Pest Management Plans (NPMP) and animal identification and tracing operations, respectively. The funding agreements have specific strategy objectives and performance measures which are subject to independent audit and review. Ongoing funding is dependent on the achievement of these milestones. If the milestones are not achieved or if the funding provided has been underspent, then further funding is either suppressed or there is a return of funds obligation. Revenue in relation to Crown funding is initially recognised as a non-exchange liability and as revenue only when the milestones have been achieved.

TBFree receives funding from the dairy, beef and lamb and deer industry sectors, as well as from Regional Councils. The funding provided is restricted to being used by the entities to carry out its necessary activities to implement the NPMP for bovine tuberculosis strategies and programmes of work for the benefit of the respective industries and regions. The funding agreements do not impose any condition on the entity that require a return of unspent funds. Revenue in relation to this funding is recognised when it is receivable or received by the entities.

**(b) Slaughter and tag levies**

In accordance with legislation [National Animal Identification and Tracing Act 2012 and related Levies Regulations 2012], levies are charged when animals are slaughtered and when animal ear tags are sold. The levies collected are restricted to being used to contribute towards the establishment and ongoing maintenance of a national animal identification and tracing system that will facilitate a range of functions, including disease and biosecurity management. There are no conditions imposed on the entities in respect of this stream of revenue. Revenue in relation to these levies is recognised when it is receivable or received by the entities.

**Note 8: Expenditure**

Total expenses includes the following specific items.

<i>In thousands of New Zealand Dollars</i>	Note	2016	2015 Restated
Short-term employee benefits		13,818	13,747
Amortisation and depreciation	10	2,200	2,270
Operating lease expenses	16	1,352	1,432
Fees paid to KPMG for audit of financial statements		35	35
Fees paid to KPMG for accounting advice		20	-
Fees paid to KPMG for internet security assessment		-	34
Fees paid to KPMG for NAIT revenue assurance		-	23

**Note 9: Receivables and other current assets**

<i>In thousands of New Zealand Dollars</i>	Note	2016	2015 Restated
<b>Receivables from non-exchange transactions</b>			
DairyNZ		1,773	1,485
Deer Industry New Zealand		70	65
Slaughter levies receivable		2,789	2,803
Regional Councils		430	729
Tag levies receivable		401	1,384
Other receivables and prepayments		412	230
Less Doubtful debt provision		-	(9)
<b>Total receivables from non-exchange transactions</b>		<b>5,875</b>	<b>6,687</b>

## Note 10: Intangible assets

<i>In thousands of New Zealand Dollars</i>	<b>Software</b>	<b>Work in Progress</b>	<b>Total</b>
<b>Cost</b>			
<b>Balance as at 1 July 2014</b>	15,123	1,940	17,063
Additions	4,010	2,300	6,310
Transfers	-	(4,010)	(4,010)
<b>Balance as at 30 June 2015</b>	<b>19,133</b>	<b>230</b>	<b>19,363</b>
Additions	1,435	1,868	3,303
Capitalisation of WIP	-	(1,416)	(1,416)
<b>Balance as at 30 June 2016</b>	<b>20,568</b>	<b>682</b>	<b>21,250</b>
<b>Amortisation and impairment</b>			
<b>Balance as at 1 July 2014</b>	8,637	-	8,637
Amortisation	1,826	-	1,826
<b>Balance as at 30 June 2015</b>	<b>10,463</b>	<b>-</b>	<b>10,463</b>
Amortisation	1,805	-	1,805
<b>Balance as at 30 June 2016</b>	<b>12,268</b>	<b>-</b>	<b>12,268</b>
<b>Net book values</b>			
Balance as at 30 June 2015	8,670	230	8,900
Balance as at 30 June 2016	8,300	682	8,982



### Policies – Intangible assets

All intangible assets are stated at cost less amortisation and impairment losses. Cost includes expenditure that is directly attributable to the acquisition of the items. Where an asset is acquired in a non-exchange transaction for nil or nominal consideration the asset is initially measured at its fair value. Subsequent expenditure is capitalised only if it is probable that the future economic benefits associated with the expenditure will flow to the Group. All other repair and maintenance costs are recognised in surplus or deficit as incurred. The costs of self-constructed assets are recognised as capital work in progress until the assets are operating in the manner intended, at which time they are transferred to intangible assets.

Amortisation is recognised in surplus or deficit and is calculated to write off the cost of items of intangible assets less their residual values using the straight-line method over their useful lives of 3-10 years.

The assets' residual values and useful lives are reviewed, and adjusted prospectively, if appropriate, at the end of each reporting period. The majority of computer software comprises the NAIT Database and Disease Management systems.

### Judgement – Capitalisation of internally generated software

Judgement is required when distinguishing between the research and development phase of customised software projects and whether the costs meet the recognition requirements for capitalisation. Post capitalisation, management monitors whether the recognition requirements continue to be met, or whether there are any indications that capitalisation costs should be impaired. As enhancements to internally developed software are created and capitalised, the Group reviews the useful life of the existing asset. If the enhancement will extend the useful life of the asset, this is adjusted. Historic amortisation is not affected but amortisation for the extended life of the asset is revised on a straight line basis.

### Note 11: Revenue received in advance

<i>In thousands of New Zealand Dollars</i>	<b>2016</b>	<b>2015 Restated</b>
<b>Crown Revenue Advances</b>		
Opening balance	417	618
Increase / (Decrease) for the year	920	(201)
<b>Total revenue received in advance</b>	<b>1,337</b>	<b>417</b>

Revenue received by TBFree from the Crown and not fully expended during the financial year is transferred to Funders' Revenue Advances and is held for future use as described in note 7(a).

## Note 12: Capital and reserves

### (a) Share capital

OSPRI has 110 (2015:110) ordinary shares that have been issued and fully paid with no par value.

### (b) NAIT reserve

NAIT is obligated to deliver the national animal identification and tracing system which will require capital spending from time to time. This reserve represents the funds held for future development of the system as well as the ability to maintain service levels in the event that revenue streams change significantly at short notice.

### (c) Beef industry reserve

This reserve has been established to ensure that the funding received from the Beef industry is applied to the costs incurred under the TBfree work-plan that add value to the Beef industry. The amounts of expenditure will fluctuate from year to year.

### (d) Dairy industry reserve

This reserve has been established to ensure that the funding received from the Dairy industry is applied to the costs incurred under the TBfree work-plan that add value to the Dairy industry. The amounts of expenditure will fluctuate from year to year.

### (e) Deer industry reserve

This reserve has been established to ensure that the funding received from the Deer industry is applied to the costs incurred under the TBfree work-plan that add value to the Deer industry. The amounts of expenditure will fluctuate from year to year.

## Note 13: Financial instruments

### Policies

#### *(i) Non-derivative financial assets and financial liabilities – recognition and derecognition*

The Group initially recognises financial instruments on the trade date at which the Group becomes a party to the contractual provisions of the instrument.

The Group derecognises a financial asset when the contractual rights to the cash flows from the asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset transferred, or it neither transfers nor retains substantially all of the risks and rewards of ownership and does not retain control over the transferred asset. Any interest in such derecognised financial assets that is created or retained by the Group is recognised as a separate asset or liability. The Group derecognises a financial liability when its contractual obligations are discharged or cancelled, or expire.

Financial assets and financial liabilities are offset and the net amount presented in the statement of financial position when, and only when, the Group currently has a legally enforceable right to offset the amounts and intends either to settle them on a net basis or to realise the asset and settle the liability simultaneously.

#### *(ii) Non-derivative financial assets and liabilities – measurement*

**Financial assets:** The Group's financial assets are cash and cash equivalents and receivables from exchange and non-exchange transactions. All financial assets are classified as loans and receivables. Loans and receivables are initially measured at fair value plus any directly attributable transaction costs. Subsequent to initial recognition, they are measured at amortised costs using the effective interest method.

**Financial liabilities:** The Group's financial liabilities include payables from exchange and non-exchange transactions which are classified as financial liabilities at amortised cost. Other financial liabilities are initially measured at fair value less any directly attributable transaction costs.

**(a) Fair values**

The fair value of the financial assets and liabilities are included at the amount at which the instrument could be exchanged in a current transaction between willing parties, other than in a forced sale or liquidation.

The Group has no financial instruments that are subject to fair value adjustments at each reporting period. The carrying amounts of all financial assets and liabilities approximate their fair values.

**(b) Financial risk management***(i) Credit risk*

Credit risk is the risk of financial loss to the Group if a counterparty to a financial instrument fails to meet its contractual obligations. The Group is exposed to credit risk from its financial assets, including cash and cash equivalents with financial institutions, as well as credit exposures to industry participants including outstanding receivables and committed transactions. The Group does not require any collateral or security to support financial instruments relating to receivables or financial institutions. The Group holds all its cash and cash equivalents with New Zealand registered banks with a short term debt rating from Moody's of not less than A1 or Standard & Poor's of not less than AA- (NZ Reserve Bank Listing). The maximum amount that may be held with any OSPRI Group's banking provider is \$10 million. The carrying amounts of all receivables represents the maximum exposure to credit risk.

*Receivables from exchange and non-exchange transactions*

The aging of receivables from exchange and non-exchange transactions as at reporting date is presented below.

<b>2016</b>	<b>Gross</b>	<b>Impairment</b>	<b>Net</b>
<i>In thousands of New Zealand Dollars</i>			
Not past due	2,714	-	2,714
Past due 1 - 30 days	1	-	1
<b>Total receivables</b>	<b>2,715</b>	<b>-</b>	<b>2,715</b>

<b>2015 (Restated)</b>	<b>Gross</b>	<b>Impairment</b>	<b>Net</b>
<i>In thousands of New Zealand Dollars</i>			
Not past due	6,532	(9)	6,523
Past due 1 - 30 days	2	-	2
<b>Total receivables</b>	<b>6,534</b>	<b>(9)</b>	<b>6,525</b>

The movement in the impairment allowance for receivables is presented below.

<i>In thousands of New Zealand Dollars</i>			
<b>Balance as at 1 July 2014</b>		<b>9</b>	
Impairment loss		-	
<b>Balance as at 30 June 2015 (restated)</b>		<b>9</b>	
Impairment loss		3	
Write off of bad debts		(12)	
<b>Balance as at 30 June 2016</b>		<b>-</b>	

There are no amounts related to receivables from non-exchange transactions that are impaired as at reporting date except for carrying the provision for doubtful debts relating to receivables for the Otago Land Levy from the prior year.

*(ii) Liquidity risk*

Liquidity risk arises from the Group's management of working capital and it is the risk that the Group will encounter difficulty in meeting its financial obligations as they fall due. The Group's approach to managing liquidity risk is to ensure, as far as possible, that it will always have sufficient cash and borrowing facilities to meet its liabilities when due, under both normal and stressed conditions. The only financial liabilities that the Group has are payables from exchange and non-exchange transactions, which are expected to settle within 60 days of the reporting date.

*(iii) Market risk*

Market risk arises from the Group's use of financial instruments that are interest bearing, denominated in foreign currencies, and/or traded in public markets. Market risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of change in interest rates, foreign exchange rates and market prices. During the financial year and as at reporting date, the Group's exposure to market risk is not material.

**(c) Capital management**

The Group's capital includes share capital, retained earnings and various reserves, which accumulate surpluses intended for specific industry purposes and future commitments.

The Group manages its capital with long term objectives tailored to each subsidiary.

**Note 14: Related parties**

OSPRI New Zealand Limited is the Parent and ultimate controlling entity. It has two wholly owned subsidiaries TBFree and NAIT. The Shareholders of OSPRI include Beef + Lamb New Zealand Limited (45.5%), DairyNZ Limited (45.5%) and Deer Industry New Zealand (9%).

**(a) Key management personnel**

The key management personnel, as defined by IPSAS 20 Related Party Disclosures, are the Directors on the Board, who together constitute the governing body of the Company and members of the senior management group, responsible for reporting to the governing body.

The total remuneration of members of the Board and the number of individuals receiving remuneration in this category are:

	2016	2015
Board fees	\$218,000	\$218,000
Number of persons	6	6
Consultancy services	\$14,000	-
Number of persons	3	-
<b>Total Remuneration to Board members</b>	<b>\$232,000</b>	<b>218,000</b>

The senior management group consists of the chief executive office and general managers. The total remuneration of the senior management group and the number of managers, on a full-time equivalent basis, receiving remuneration in this category are:

	2016	2015
Total remuneration to senior management	\$1,559,000	\$1,945,000
Number of persons	6	6



**(b) Transactions with other related parties**

The Group had the following transactions with other related parties and the balances owing to and from other related parties are disclosed in the table below.

<i>In thousands of New Zealand Dollars</i>	<b>Transaction value for year ended 30 June</b>		<b>Balances outstanding as at 30 June</b>	
	<b>2016</b>	2015 Restated	<b>2016</b>	2015 Restated
Funding provided:				
AgResearch Limited	<b>(830)</b>	1,342	-	-
Payables to other related parties:				
AgResearch Limited	-	-	<b>(144)</b>	(165)

AgResearch Limited has a long standing relationship with TBfree. It has become a related party as Jeff Grant is a Director of AgResearch. Barry Harris is the deputy chair of AgResearch Limited. Both are current Directors of TBFree.

**Note 15: Reconciliation of net cash flows from operating activities to surplus/(deficit)**

<i>In thousands of New Zealand Dollars</i>	<b>2016</b>	<b>2015 Restated</b>
Surplus for the year	<b>8,679</b>	3,449
Interest received	<b>(237)</b>	(276)
<b>Non-cash movements</b>		
Amortisation and depreciation	<b>2,201</b>	2,270
Changes in working capital	<b>(528)</b>	(1,861)
<b>Net cash flows from operating activities</b>	<b>10,115</b>	<b>3,582</b>

## Note 16: Operating leases as lessee

The Group has entered into a number of non-cancellable operating leases for buildings, office equipment and motor vehicles. The lease commitments are based on current rentals. Future lease commitments at year end in respect of these non-cancellable leases are as follows:

<i>In thousands of New Zealand Dollars</i>	<b>2016</b>	<b>2015 Restated</b>
Due within one year	836	1,182
Due between one and two years	189	580
Due between two and five years	136	43
<b>Total non-cancellable operating lease payments</b>	<b>1,161</b>	<b>1,805</b>

### Policies

Leases in which a significant portion of the risks and rewards of ownership are retained by the lessor are classified as operating leases. Operating lease payments are expensed on a straight line basis over the period of the lease.

## Note 17: Commitments

### (a) Pest management control commitments

TBfree enters into contractual arrangements for the completion of Pest Management Control operations. The estimated cost to complete pest control operations that were not accrued, but had been contracted at 30 June 2016 is \$1.71 million (2015: \$0.97 million). All of these operations will be completed within the following financial year from funding contained within the 2016/17 year's budget.

### (b) Research contract commitments

TBfree has entered into a number of funding agreements for research projects. The continued funding of these is subject to performance reviews. Future commitments at year end in respect of these funding agreements are as follows:

<i>In thousands of New Zealand Dollars</i>	<b>2016</b>	<b>2015 Restated</b>
Due within one year	1,056	1,082
Due between one and two years	1,716	1,065
Due between two and five years	435	740
<b>Total non-cancellable operating lease payments</b>	<b>3,207</b>	<b>2,887</b>

## Note 18: Contingent liabilities

The Group has ongoing claims, investigations and inquiries, none of which it currently believes are to have significant effect on the financial position or profitability of the Group (2015: Nil)

## Note 19: Subsequent events

There were no significant events after balance date that would have a material impact on the financial statements (2015: Nil).

## Note 20: Transition to PBE Standards

As stated in Note 2 these are the Group's first financial statements prepared in accordance with PBE Standards. The Group previously prepared financial statements under a NZ IFRS (PBE) Standards. The accounting policies set out in Note 4 and in the Notes have been applied in preparing the financial statements for the year ended 30 June 2016, the comparative information presented in these financial statements for the year ended 30 June 2015 and in the preparation of an opening PBE Standards statement of financial position at 1 July 2014 (the Group's date of transition).

In preparing its opening PBE standards statement of financial position, the Group has adjusted amounts reported previously in financial statements prepared in accordance with NZ IFRS (PBE) basis of accounting. An explanation of how the transition from previous NZ IFRS (PBE) GAAP to PBE Standards has affected the Group's financial position, financial performance and cash flows is set out in the following tables and the notes that accompany the tables.

### (a) Adjustment to 'Non-exchange revenue' for year ended 30 June 2015

<i>In thousands of New Zealand Dollars</i>	Note	<b>2015 Restated</b>
<b>Total non-exchange revenue – previous basis of accounting</b>		<b>88,819</b>
Adjustment required due to change in treatment to recognise revenue from non-exchange transactions		2,839
<b>Total non-exchange revenue – PBE Standards</b>	<b>7</b>	<b>91,658</b>

### (b) Adjustment to 'Finance income' for year ended 30 June 2015

<i>In thousands of New Zealand Dollars</i>	<b>2015 Restated</b>
<b>Total revenue – previous basis of accounting</b>	<b>269</b>
Adjustment required due to change in treatment to recognise revenue from non-exchange transactions	126
<b>Total revenue – PBE Standards</b>	<b>395</b>

### (c) Reconciliation of comprehensive revenue and expense for the year ended 30 June 2015

<i>In thousands of New Zealand Dollars</i>	<b>2015 Restated</b>
<b>Net surplus/(deficit) for the year – previous basis of accounting</b>	<b>205</b>
Adjustment required due to change in treatment to recognise revenue from non-exchange transactions	3,244
<b>Total comprehensive revenue and expense for the year – PBE Standards</b>	<b>3,449</b>

**(d) Adjustment to 'Revenue in advance'**

<i>In thousands of New Zealand Dollars</i>	Note	<b>2015 Restated</b>	2014
<b>Revenue in advance – previous basis of accounting</b>		<b>13,510</b>	10,468
Adjustment required due to change in treatment to recognise revenue from non-exchange transactions		<b>(13,093)</b>	(9,849)
<b>Total equity – PBE Standards</b>	<b>11</b>	<b>417</b>	<b>618</b>

**(e) Reconciliation of equity as at 1 July 2014 and 30 June 2015**

<i>In thousands of New Zealand Dollars</i>	<b>2015 Restated</b>	2014
<b>Total equity – previous basis of accounting</b>	<b>5,510</b>	5,305
Adjustment required due to change in treatment to recognise revenue from non-exchange transactions	<b>13,093</b>	9,849
<b>Total equity – PBE Standards</b>	<b>18,603</b>	<b>15,154</b>

**(f) Notes to the reconciliations**

Prior to adopting PBE Standards, the Group did not have an explicit accounting policy relating to revenue from non-exchange transactions. Generally, non-exchange revenue was recognised when received and if the funds have been spent. Under PBE Standards, the Group makes an assessment as to whether there are any stipulations relating to the funding arrangements that impose a “use or return” obligation and recognises revenue in accordance with the policy in note 7.



# INDEPENDENT AUDITOR'S REPORT



## To the shareholders of OSPRI New Zealand Limited

We have audited the accompanying financial statements of OSPRI New Zealand Limited ("the group") and its subsidiaries, on pages 66 to 93. The financial statements comprise the statements of financial position as at 30 June 2016, the statements of comprehensive revenue and expenses, changes in net assets/equity and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information, for the group.

This report is made solely to the shareholders as a body. Our audit work has been undertaken so that we might state to the group's shareholders those matters we are required to state to them in the auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the group's shareholders as a body, for our audit work, this report or any of the opinions we have formed.

### Directors' responsibility for the group and group financial statements

The directors are responsible on behalf of the group for the preparation and fair presentation of the group financial statements in accordance with generally accepted accounting practice in New Zealand (being Public Benefit Entity Standards (Public Sector)) and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement whether due to fraud or error.

### Auditor's responsibility

Our responsibility is to express an opinion on the group financial statements based on our audit. We conducted our audit in accordance with International Standards on Auditing (New Zealand). Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the group and group financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the group and group financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the group and group's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the group and group's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates, as well as evaluating the presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Other than in our capacity as auditor we have no relationship with, or interests in the group.

### Opinion

In our opinion, the financial statements on pages 66 to 93 comply with generally accepted accounting practice in New Zealand and present fairly, in all material respects, the financial position of OSPRI New Zealand Limited as at 30 June 2016 and their financial performance and cash flows for the year then ended in accordance with Public Benefit Entity Standards (Public Sector).

18 August 2016  
Wellington







# DIRECTOR PROFILES

*As at 30 June 2016*



## JEFF GRANT

Jeff farms sheep, beef and deer at Balfour in Southland and has extensive agri-business and rural sector leadership experience. He is chairman of the Board of Directors for OSPRI. Jeff is also chairman of the Milford Sound Development Authority. He is a director of SBS Bank, AgResearch Limited, Finance Now, New Zealand Young Farmers, and Southern Institute of Technology; and a former chairman of the New Zealand Meat Board, Meat and Wool New Zealand, and the Primary Industry Council. He has also served as a Member of Parliament.



## LESLEY CAMPBELL

Lesley has more than 20 years' experience in the primary production sector. She brings vast experience in working with government agencies and ministers, and an ability to lead change and manage diverse and complex industry stakeholder interests. Lesley is currently the Chief Executive of Commercial Fisheries Services Limited (FishServe) and is also a director of Seafood Innovations Limited, FINNZ, a subsidiary consulting company of FishServe, and Chair of the Seafood Standards Council. Lesley's areas of expertise include strategic and business planning, budgeting, cost recovery processes, policy development and preparation of legislation, and converting legislation into operational systems.



## BARRY HARRIS

Barry is a company director with extensive governance and executive experience. Barry has held a number of chief executive roles, including with Environment Waikato, Greater Wellington Regional Council and Hamilton City Council. He was also a senior executive with Fonterra for five years. Barry is currently chairman of Agricultural Service Limited, Food Innovation Waikato, and McFall Fuels; and director of DairyNZ, NZ Food Innovation Network, Primary ITO and WEL Networks. Previous boards have included CentrePort; RD1; International Nutritionals; Hamilton Riverside Hotels; and Local Authority Shared Services. Barry has a Master of Agricultural Science (Honours) and lives in Hamilton.



### DEBORAH ROCHE

Deborah joined the Ministry for Primary Industries (MPI) as the Deputy Director-General Policy and Trade in February 2013. Before joining MPI, Deborah was seconded to the Department of the Prime Minister and Cabinet for 18 months, where she was the advisor on State Services, Better Public Services, defence, sport and recreation, and a member of the Officials' Committee on Economic Growth and Infrastructure. Prior to this, Deborah spent over 15 years in various roles in health. She holds an MSc (London School of Economics), MAppSc (University of South Australia), CertTT (Waikato Polytechnic), and a DipPhys (Auckland Institute of Technology).



### FENTON WILSON

Fenton is Chairman of Hawke's Bay Regional Council, and has represented the Wairoa constituency since 2009. Born in Waipukurau and educated in Frasertown, Wairoa and Hastings, Fenton has worked most of his life in the Wairoa district. He farms a 235ha sheep and beef property with his wife Sue and is Chairman of the Wairoa Community Development Trust, and the Hawke's Bay Civil Defence Joint Committee. He also chairs the Hawke's Bay Drought Committee when activated.



### KEITH SUTTON

Keith is a Director of Sutton McCarthy Limited, which provides strategic and financial advice to corporates, SOEs, multinationals and other clients. He is chairman of Taranaki Investment Management Limited, a director of Gough Group Limited, Wellington International Airport Limited, Rural Livestock Limited and a number of other companies. He is a member of the Te Tumu Paeroa advisory board. Keith is a former chairman of the New Zealand Futures and Options Exchange Limited, Executive Director of DFC New Zealand Limited and former member of the National Provident Fund Board. He has farming and forestry interests and is a member of the Institute of Directors and the Institute of Finance Professionals. He holds a Bachelor of Commerce and Administration degree in Economics and Accounting. Keith resigned from the Board of OSPRI effective from 1 July 2016.



