



STATEMENT OF
Corporate Intent
2010/11



Landcare Research
Manaaki Whenua

Landcare Research Profile

Head office: Gerald Street, Lincoln, Canterbury

Postal address: PO Box 40, Lincoln 7640

Web address: www.landcareresearch.co.nz

Ownership: Crown-owned entity (established under the CRIs Act 1992)

Governance: Shareholder-appointed Board of eight Directors: Chair Jo Brosnahan (2006), Alastair Lawrence, Graeme Boyd, Robin Pratt, Murray (John) Luxton, Tania Simpson, Peter Schuyt, Victoria Taylor

Senior management: Chief Executive Warren Parker (2005); Chief Financial Officer Carol Bellette (2007); Science General Managers Dave Choquenot (2003) and Richard Gordon (1995); General Manager Business Mike Lee (2006); General Manager People & Performance Katrina Direen (2010)

Staff: 420 FTEs located at 10 sites – 311 research and research support; 70 support services, management and new business; 39 Sirtrack

Assets: Total book value of property, plant and equipment \$32.4m

National databases and collections: We are custodian of collections and databases of plants (600,000 specimens), insects and their relatives (7 million specimens), fungi (90,000 dried specimens), living cultures of fungi and bacteria (17,000 strains), nematodes (unsegmented worms 60,000 specimens), flax and cabbage trees (living collection of cultivars and wild provenances), and databases on cultural uses of New Zealand plants (2,000 records), land characteristics (national database), soils (1,500 profiles), and vegetation (160,000 plot records)

Vision: Innovative science for a sustainable future

Core purpose: Science solutions for the wise use and care of land environments to enhance New Zealand's prosperity

Values: Collaboration, curiosity, clarity

Customers: 76% of revenues are derived from the public sector including FRST (45%), MoRST (7%), central government (16%), local government (3%), other research providers (5%), with the business, commercial and international sectors providing revenue of 24%

Sirtrack: 100%-owned subsidiary, based in Havelock North, specialising in design and manufacture of wildlife tracking equipment: www.sirtrack.com

New business and environmental technologies:

The carbonZero^{Cert}™ programme – carbon neutrality certification: www.carbonzero.co.nz and CEMARS™ measurement and reduction scheme

Enviro-Mark[®]NZ – environmental management systems and certification: www.enviro-mark.co.nz

ISI (Invasive Species International) – eradication and control of invasive pests: www.isinz.com

EcoGene™ – DNA-based diagnostic services for biosecurity and biodiversity: www.ecogene.co.nz

EBEX21[®] – carbon sequestration through indigenous forest: www.ebex21.co.nz

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1. Introduction

Landcare Research – also known by our Māori name Manaaki Whenua ('care for the land') – is New Zealand's leading provider of innovative science and technology for the wise use of its land environments. By understanding both the short and long-term impacts of the economy and society on the natural environment, Landcare Research designs solutions to sustain healthy land environments while at the same time increasing the economic and social well-being of New Zealanders. This Statement of Corporate Intent (SCI) sets out how Landcare Research will achieve its core purpose during the 2010/11 financial year.

Landcare Research is a Crown Research Institute, formed in 1992, and is wholly owned by the New Zealand Government.

Background to Statement of Corporate Intent

This SCI is submitted by the Board of Directors of Landcare Research New Zealand Ltd pursuant to Section 16 of the Crown Research Institutes Act 1992. The SCI sets out the Board's overall intentions and objectives for the Company to 30 June 2011 to meet the shareholders' expectations. It meets the 2010 Business Planning Round Expectations for Crown Research Institutes, and in particular addresses clarity of purpose, continuous improvement in financial performance and notes the CRI Taskforce recommendations. Financial and non-financial performance forecasts for the next two years are also provided.

Company structure and organisational leadership

The Landcare Research Group, including the Outcome Based Investments (OBIs) it leads, along with the joint ventures and collaborative research centres it is a party to, is portrayed in Figure 1.

Appendix I provides further detail on subsidiaries and research collaborations.

A board of eight directors and an executive team of six have overall responsibility for the Landcare Research Group comprising the research business (Parent), three wholly owned subsidiaries (Sirtrack Ltd, Landcare Research International Ltd and Landcare Research US Ltd), several joint-venture collaborations and three OBIs.

The organisation is structured around five portfolios: Two Science portfolios (Biological Systems, and Environment & Society), Business, Finance, and People and Performance (Figure 2).

Landcare Research's c. 420 staff are located at ten sites: Auckland, Hamilton, Gisborne, Palmerston North, Wellington, Nelson, Lincoln, Alexandra and Dunedin, with Sirtrack based in Havelock North.

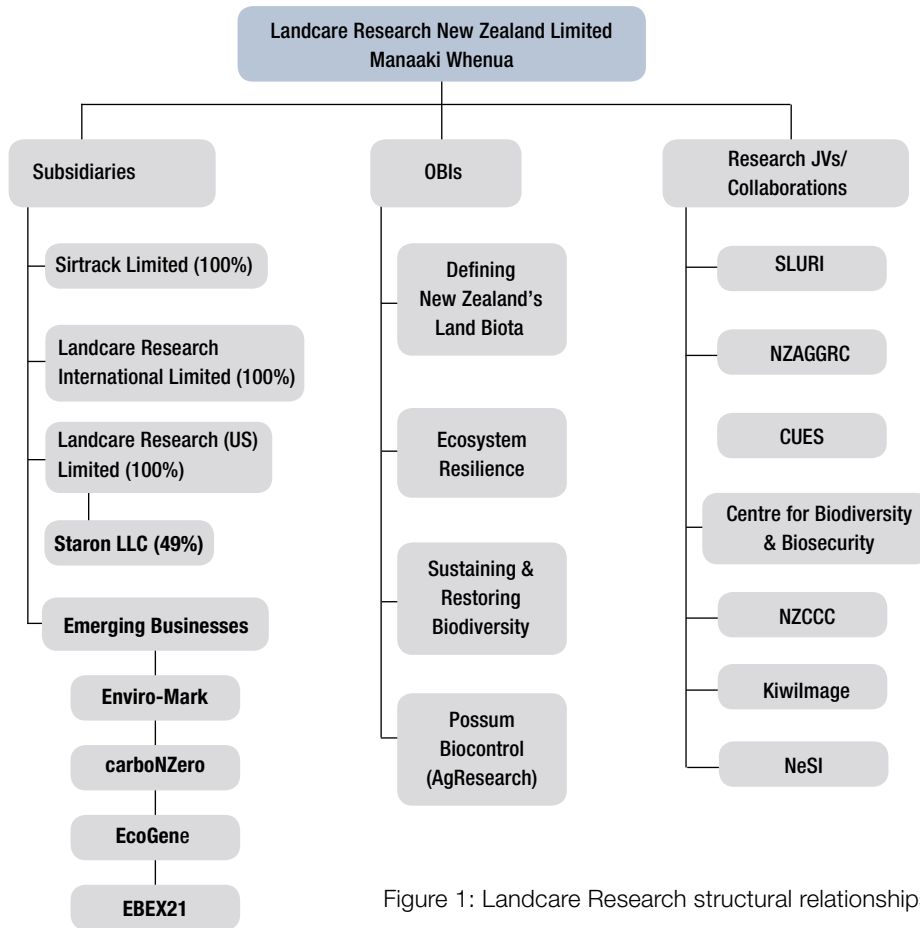


Figure 1: Landcare Research structural relationships.

SLURI (Sustainable Land Use Research Initiative); NZAGGRC (New Zealand Agricultural Greenhouse Gas Research Centre); CUES (Centre for Urban Environmental Sustainability); NZCCC (New Zealand Climate Change Centre).

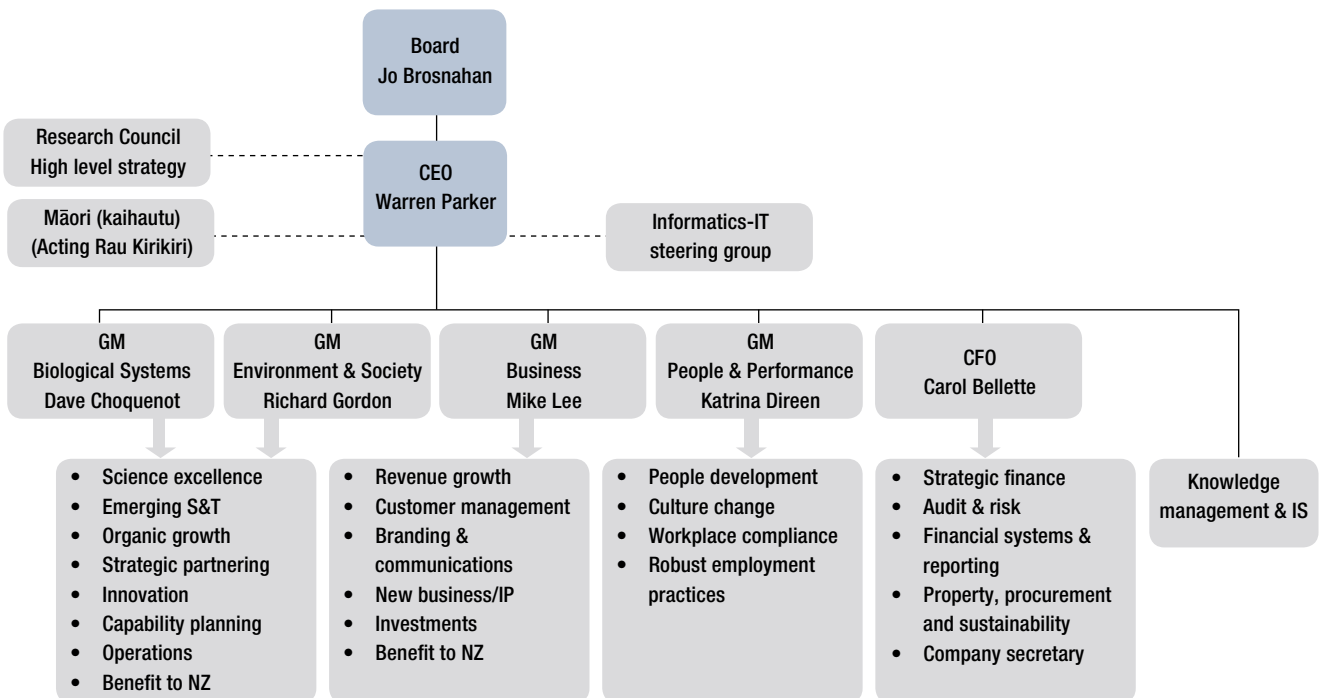


Figure 2: Landcare Research organisational structure.

2. Core Purpose: Nature and Scope of Activities

Landcare Research's core purpose is to provide science solutions to enable the wise use and care of land environments to enhance New Zealand's prosperity (see insert for draft 'Core purpose'). Protecting and enhancing New Zealand's 'natural capital' and ensuring its sustainable use in economic development is at the centre of our work.

Landcare Research has a distinct role amongst the CRIs as the 'integrating CRI' – we work across sectors, scales, time frames and cultures to address the nationally significant issues confronting New Zealand's terrestrial ecosystems. These challenges include, for example, enabling further land-use intensification without diminishing water quality, lowering greenhouse gas emissions by a quarter by 2012 to meet

New Zealand's 1990 Kyoto commitment, and arresting the loss of biodiversity, particularly within lowlands and coastal margins.

We develop solutions that will lift New Zealand's economic performance and improve the sustainable use of natural resources, such as land and water. We transfer knowledge, information and tools to support better environmental policy and risk management, improved business competitiveness, and increased benefit to society from the natural environment. Our core purpose will be updated and refined with MoRST and key stakeholders during June 2010. We are actively working with our key stakeholders to provide clarity and improved understanding of our distinctive contribution to the New Zealand economy.

Core purpose: Science solutions for the wise use and care of land environments to enhance New Zealand's prosperity

Our science: contributes to six national outcomes by:

1. Enabling strategic choices for **land environments** (including soil, water & landscapes)
2. Promoting multiple benefits from **climate change**
3. Fostering globally competitive **businesses and communities**
4. Supporting **Māori** economic development and guardianship of **natural resources**
5. Ensuring effective, acceptable control of **invasive weeds, pests and diseases**
6. Protecting and restoring **biodiversity** and the ecological services it provides

Our role is to provide knowledge, tools and advice on land environments to:

1. Government (central and local), to develop evidence-based policy, performance monitoring and reduced exposure to risks
2. Business, to proactively adapt to resource constraints, climate change and changing consumer expectations
3. Iwi, to achieve their aspirations for development
4. Society, to make informed choices on the use of land environments, understanding the risks and opportunities, and to ensure options for future generations

Our distinctive approach is based on:

- **Integration** across science disciplines, to reflect ecosystems in their entirety; sectors and scales, to unify local, regional, national and global outcomes; and time, to give an inter-generational perspective to decision-making
- **Collaboration** with science providers to build best national teams, stakeholders for natural resources that are highly contested and diversely valued, and cultures to incorporate different world views especially Te Mātauranga Māori
- **National Databases and Collections** – We actively manage, develop and apply seven nationally significant databases and collections to support New Zealand land environments
- **Translation** of complex science insights into practical advice and application through the use of innovative information technology, transdisciplinary science techniques and close engagement with end-users
- **An enduring guiding philosophy** – Manaaki whenua, manaaki tangata ('care for the land, care for the people')

3. Alignment with Government and Industry Priorities

All of Landcare Research science outcomes contribute to the Government's priority for economic growth, in particular the need to improve the sustainable use of natural resources and manage exposure to environmental risks. This reflects very high mutual dependence between the New Zealand economy and the environment. By providing science advice and solutions to enhance New Zealand's natural advantage, Landcare Research will contribute directly to productivity growth and resource-efficiency gains in the primary sector and reduce the environmental footprint of business in the secondary and tertiary sectors. These outcomes will help build the credibility of New Zealand's 100% pure brand and therefore the tourism industry. Further, environmental technologies designed and proven in New Zealand by Landcare Research and its partners have high potential to contribute to strong growth in the tradable sector through the licensing and sale of intellectual property.

Implementation of the CRI Taskforce Recommendations over the next 12 months will establish new foundations for our long-term future especially with respect to our core purpose, business and end-user engagement, and earlier technology transfer. This has important implications for our priorities next year. We intend to be proactive in addressing these. First, our work to develop a customer-centric culture will be given further impetus. Second, we will work with other providers to establish sensible cross-agency collaborations with respect to core purpose funding because this will define our long-term science capabilities and balance of expertise (e.g. for biosecurity and soil – land resources research). Third, we will develop more effective communication channels to engage end-users and strengthen Landcare Research's identity, especially within the business and industry sectors. Fourth, earlier technology transfer means we will shift our focus towards earlier-stage licensing and/or sale of technology (rather than

business incubation), and also strengthen our capabilities in 'knowledge brokering' and information translation. Fifth, we will work with stakeholders to enhance non-financial performance measures.

Landcare Research is strongly aligned to its major customers – the Department of Conservation, Ministry of Agriculture & Forestry, Ministry for the Environment, the Animal Health Board and regional councils – to meet their strategic and operational needs. Through iwi partnerships Landcare Research is supporting Māori economic development plans and the guardianship of their natural assets.

The Primary Growth Partnership (PGP) provides a comprehensive investment framework for Landcare Research to engage closely with the primary sector and in collaboration with sector-based CRIs to achieve science-based outcomes. Elements of the Business Assistance Package will support this initiative. The imperative to improve the productivity of natural resources (such as land, nutrients and water) in order to grow primary sector exports and meet consumer demand for products with verifiable environmental claims provides a strong basis for Landcare Research to participate in PGP and Business Assistance initiatives with primary industry sector-groups and manufacturing and service firms in a manner that is complementary to the sector-based CRIs. Several proposals were established in 2010 with leading agricultural entities; more are planned in 2011.

Landcare Research's extensive international network of contacts in research institutes, public policy agencies and businesses at the forefront of sustainability provide substantial 'spillover' benefits to New Zealand and are an important source of high quality scientific and technical staff.

4. Strategic Initiatives and Objectives

Our 2011–15 strategic plan provides the framework for meeting the shareholding Ministers' expectations in 2010/11. Our strategic outcome goals are:

Science: Achieve outcomes to enhance New Zealand's economic and environmental performance as outlined in the core purpose. Examples of the focus areas and current projects within each outcome are presented in Appendix II.

Financial: Increase financial resilience to meet shareholders' expectations and enhance the scope for reinvestment.

Achievement of the science and finance outcomes will be supported by strategic initiatives for:

1. **CRI Taskforce:** Proactively work with key stakeholders to maximise the opportunities for Landcare Research and New Zealand from the Taskforce Recommendations.
2. **International engagement:** Build and strengthen international networks to access new ideas, top talent, funding and larger-scale opportunities.
3. **Reinvestment of surpluses:** Accelerate the creation of national benefit by increasing Landcare Research's science competitiveness and shortening lead times of new knowledge and technologies to market.

The strategic organisational enablers are:

1. **Customers, communication and branding:** Achieve superior understanding and interaction with our customers and key stakeholders to secure revenue growth targets and maximise national benefit of our R,S&T.
2. **Technology transfer and environmental technologies:** Develop and transfer products and services that improve the sustainable use of natural resources and environments and expand economic opportunity.

3. **Systems, workplace and infrastructure:** Provide a flexible, modern work environment with best practice in organisational sustainability and smart working solutions.

4. **People, performance and culture:** Develop an organisational culture which is adaptive to changing environments, attractive to high achievers and supports high quality and enduring partnerships with key clients and research collaborators.

Developing and transferring environmental technologies

The development and early transfer of environmental technologies, customer relationship management and superior data management/informatics provide the best opportunities to strengthen Landcare Research's competitiveness. Technology transfer service revenues are growing at 15–20% a year. Opportunities to accelerate this through the early engagement of private sector business and investors are being actively sought.

The potential for increased national benefit from environmental technologies during the next three years is expected to be principally generated by the carboNZeroCert™ programme, and business incubations (Enviro-Mark® NZ, EBEX21®, EcoGene™, Invasive Species International). 'Pipeline' projects will be accelerated to reach a proof-of-concept stage that is attractive to private sector partners and investors. Technology transfer, already well-established through Manaaki Whenua Press (an online service for science publications on land environments and their management) and portal-based access to the seven national databases and collections Landcare Research curates for the Crown, will be enhanced through new publications and information technologies.

5. Performance Measures and Targets

Non-financial performance

Non-financial performance measures	Actual 2007/08	Actual 2008/09	Forecast Full-year 2009/10	Target 2009/10	Target 2010/11
Staff composition (FTEs)					
Research	288	269	265	298	280
Research support	46	45	46	50	45
Other (Management, Corporate Services, Business Units)	60	69	70	<70	72
Sirtrack	44	38	39	43	32
Total FTEs	438	421	420	<461	<430
End-user relationships and influence¹					
Partnership initiatives	365	390	300	>200	>350
Invited technical contribution	229	311	200	>150	>220
Research application metrics¹					
Commissioned reports to users	200	177	180	160	190
Presentations on technical information and research results	538	487	400	380	450
Publications on technical information and research results	165	181	200	260	250
Peer-reviewed articles	270	360	320	305	320
Keynote and plenary presentations	18	34	12	12	14
New improved products, processes & services	81	73	60	50	60
Patents granted					
- In New Zealand	0	1	1	2	2
- Overseas	0	0	0	1	1
Number of licensing arrangements	2	3	2	3	3
Joint ventures or formal associations	0	0	0	1	1
Spin-out companies formed	0	0	0	1	1
Datasets and databank specimens supplied	>12,300	>20,700	>15,000	>12,000	>15,000
Benefit to NZ*	*			*	
Social and community responsibility ²	75	51	60	90	70
Environment responsibility					
Imputed CO ₂ from activities (tonnes) ³	2,389	3,366	2,541	<2,300	<2,500
Total energy (KWh/FTE)	9,019	9,238	8,998	<9,000	<8,910
Total travel (km/FTE)	13,883	14,055	12,363	<14,500	<14,000
Total landfill waste (kg/FTE)	12.78	3.12	2.2	<4.13	<2.0
Water use (megalitres)	8.4	10.5	9.9	<9.9	<9.8
Native birds killed through by-catch	6	2	<16	<20	<15
Māori relationships					
Māori scholarships/stipends	1	1	1	2	2
New R&D proposals for Māori sustainable development	5	4	3	7	5
Good employer					
Staff turnover					
- Research & research support (%) ⁴	8	13	11	<8	<10
- General support & management (%)	10	13	13	<10	<10
Proportion of women (% research and research support staff)	34	31	33	>40	>40
Māori science staff (number)	8	8	9	9	10
Lost-time injuries (per million hours worked)	7	6	<4	<10	<8
Lost-time injuries (days lost per lost-time injury)	2.2	1.5	<2	<4	<2

¹ Key non-financial performance indicator reported annually to the Crown Ownership Monitoring Unit (COMU).

² Includes a range of activities that increase awareness of science issues within the community, including presentations to schools, community groups and non-governmental organisations, and support for community activities, e.g. science fairs, BioBlitz.

³ We aim to offset all CO₂ emissions generated by our activities.

⁴ Target for turnover of key senior scientists is <5%.

* Examples reported in narrative sections of the annual report.

Financial targets¹

INDICATOR	2010		2011 Target	2012 Target	2013 Target
	Target*	Forecast			
Financial viability					
Revenue, \$m	62.3	60.9	64.3	68.6	73.7
EBIT, \$m	2.3	2.0	3.0	4.0	5.1
Assets, \$m	46.0	48.1	49.2	49.5	52.5
Return on Equity*	6.4%	5.9%	7.0%	8.9%	10.7%
Investment	0.9	1.2	1.2	1.2	1.4
Dividend \$m	0.5	0.5	0.7	1.0	1.4
Equity Ratio	61.8%	60.1%	61.4%	64.6%	65.0%
Quick Ratio	1.3	1.3	1.4	1.1	1.1
Gearing **	6.3%	0.0%	0.0%	1.7%	1.7%
Interest Cover	10.1	10.1	10.2	18.3	22.7

* Return on Equity excluding the cost of extraordinary restructure costs.

** Intra-year working capital requirements are higher than at year end (peak of 13.4% is forecast in 2011)

The Business Plan shows continuous improvement in financial performance. Return on equity targets for 2010/11 will be negotiated with shareholding Ministers to allow continued investment in areas that will enhance the benefits delivered to New Zealand.

6. Use of Capability Fund Revenue

Capability funding is assumed to remain static at \$5.485m from 2009/10 levels. Appendix V outlines the investment priorities across Landcare Research.

For 2010/11, investment will be aligned to priorities for the six science outcomes. This includes development of capability in emerging fields of science, capability maintenance, secondment, and filling skill gaps. Capability Fund allocations are approved by the Board, who also review progress in meeting project objectives each September.

In principle, target levels of funding will be:

- 60% in total for the science outcomes
- 20% each for the Biological Systems and Environment & Society portfolios

The above allocations will be based on:

- A balance of maintenance and new and over-the-horizon capabilities covering a spectrum from targeted research to product development
- Integration across disciplines and outcomes (i.e. innovation through integration)
- Alignment with stakeholder emerging needs

To illustrate, Capability Fund investment in projects in 2010/11 will include:

- Managing for multiple ecosystem services
- Management-based tools that will meet the needs of Māori landowners
- Integrating phylogenetics and ecology to better understand and define New Zealand's biodiversity

- Invasive species management, including research into new tools, such as breeding controls, and also the place of game animals and the use of 1080
- Kauri *Phytophthora* taxon *Agathis* ('dieback' project)
- Biofilters to mitigate landfill methane emissions
- Informatics support to improve information access and sharing between organisations
- Land-based indicators: new nesting systems to improve monitoring and management
- Microbial processes: understanding soil nutrient cycling and processes in order to enhance soil productivity
- Spatial and agent heterogeneity in rural models of land-use and land-cover change
- Tools and services for improved business performance
- Soils data and tools development, including staff succession
- e-infrastructure development and linkages, including international linkages

Funding to support fellowships/training/visiting experts (7.5–10%) will continue. This includes the Murray Jessen and other PhD and Masters scholarships, staff training, Manaaki Whenua and Manaaki Tangata travel fellowships, Hayward Senior Fellowship and Hayward Postdoctoral Fellowship.

The Company's annual report will provide a breakdown of Capability Fund investment and achievements from this. The allocation of Capability Funding includes consideration of the needs of key stakeholders, which Landcare Research engages with on an ongoing basis to identify and prioritise research needs.

¹ See Appendix III for Business Policies and Appendix IV for Definitions.

7. Services for New Zealand

National databases and reference collections

Landcare Research is custodian for seven of the 26 recognised Nationally Significant Databases and Collections (see Appendices VI & VII). These cover New Zealand's biological resources, soil resources and cultural knowledge. CRIs are required to provide interested parties with access, at reasonable cost, to the publicly funded databases. We are actively working to generate wider public-understanding of these national 'treasures', and to increase electronic accessibility and interoperability for users. Inflation-proofed 'backbone funding', initiated from July 2008, is critical to Landcare Research being able to maintain the present array of databases and collections, and associated services.

Agency-to-agency international science and technology cooperation agreements

Landcare Research will inform shareholding Ministers in writing well in advance should it plan to dissolve any formal international science and technology agreement for which it has responsibility.

The agency-to-agency international science and technology cooperation agreements operated by Landcare Research are listed and described in Appendix VIII.

Statutory functions to be undertaken

Landcare Research recognises its statutory obligations under the Crown Research Institutes Act 1992 and other acts that are relevant to the activities of the Company, including its obligations under the Companies Act 1993 (refer Section 8). The Company has policies and procedures in place to ensure its statutory obligations are met or exceeded.

8. Statutory Reporting

Landcare Research will provide information that meets the requirements of the:

- Crown Research Institutes Act 1992
- Companies Act 1993
- Financial Reporting Act 1993
- Crown Entities Act 2004
- New Zealand Institute of Chartered Accountants (NZICA) with regards to New Zealand Generally Accepted Accounting Practice (NZ GAAP)

The following information is made available to enable our shareholder to make an informed assessment of Landcare Research's performance:

- **Business plan** describing the Company's positioning, strategic and operational priorities, and financial and non-financial forecasts (over the next three financial years). The business plan will be provided prior to the start of each financial year.
- **Statement of Corporate Intent (SCI)** containing such information as the objectives and summary of the financial and non-financial performance targets of the company. The draft SCI is due not later than one month before the start of the financial year (30 May).
- **Annual report** containing sufficient information to allow an informed assessment to be made against the performance targets in the business plan and SCI. The report will

encompass the philosophy of sustainable development reporting (covering economic, social and environmental performance). Information on the Company's use of revenue from the Capability Fund will be included. The annual report is to be provided within three months of the financial year ended 30 June.

- **Half-year report** containing unaudited financial statements (including comparatives to prior year), major highlights during the period and progress in meeting key non-financial SCI targets. The half-year report is due within two months of the first half of each financial year ended 31 December.
- **Quarterly reports** containing information such as unaudited financial statements (including current quarter and year-to-date budgets and full-year forecasts). The quarterly report will include major highlights during the period. The quarterly report is due within one month of each financial quarter ended 30 September, 31 December, 31 March and 30 June.
- **Other information:** any other information as reasonably required by the shareholding Ministers pursuant to Section 20 of the Crown Research Institutes Act 1992 and Section 45B of the Public Finance Act 1989.
- **Annual General Meeting** will be held not later than six months after the balance date of the company.

9. Value of the Crown's Investment

The estimated value of the Crown's investment is represented by the following forecast levels of shareholders' funds:

Funds (\$000's)	June 2010	June 2011	June 2012	June 2013
Opening shareholders' funds	27,948	28,904	30,233	31,991
Dividend paid	(479)	(717)	(1,024)	(1,391)
Retained earnings for year	1,435	2,047	2,781	3,523
Closing shareholders' funds	28,904	30,233	31,991	34,123

- Shareholders' funds include shares, reserves and retained earnings.
- The Directors will conduct a review of the commercial value of the Company whenever they consider a valuation is appropriate.
- The Directors undertake to fully consult with shareholding Ministers at all stages of any valuation and to provide shareholding Ministers with copies of all reports.
- The ratio of shareholders' funds to total assets is shown as equity ratio in the financial targets table (refer Section 5).

10. Dividend Policy

The recently released Report of the Crown Research Institute Taskforce indicates scope for CRIs to reinvest rather than paying dividends. The CRI Taskforce noted that CRIs should 'retain surpluses for reinvestment if their Board can identify good investment opportunities, that is, those that will enhance the benefits that CRIs can deliver to New Zealand' (Recommendation 22). Landcare Research has identified a range of good investment opportunities to increase national benefit through its science, including improving the quality of its buildings and laboratories in core capability areas, improving the coordination and delivery of soil and land science, and developing capabilities in areas of emerging national importance such as environmental genomics for more effective biosecurity and biodiversity management.

The principles for determining dividends are outlined below.

Principles adopted for determining annual dividend

In determining the amount of surplus funds, consideration will be given to:

- Shareholder policies on dividends and capital structure
- Providing for strategic and capital investment requirements (including equity investments) without recourse to the Crown for equity injections to the Company
- The Company's working capital requirements (including subsidiaries and businesses in which equity is held)
- Ongoing financial viability of the Company, including its ability to repay debt
- Extent of debt financing in relation to the prudent borrowing capacity of the Company
- Obligations of the Directors under the Companies Act 1993 and other statutory requirements

The Board will detail in a submission to shareholding Ministers, within three months of the end of each financial year, the:

- Amount of dividend (if any) recommended to be distributed to the shareholders
- Percentage of tax-paid profits that the dividend represents
- Rationale and analysis used to determine the amount of dividend

Estimate of the amount or proportion of annual tax-paid earnings

An estimate of the amount or proportion of annual tax-paid earnings (from both capital and revenue sources) that is recommended to be distributed to the Crown is provided below, taking into account the statutory requirement to remain financially viable and a going concern, and the following considerations:

- Shareholder policies on dividends and target levels of debt as expressed in the Operating Framework for CRIs
- The Company's peak debt level being within the acceptable range estimated in the Capital Structure Plan (this was independently assessed in May 2006 and updated in the 2010 Business Plan)
- The Company's three times interest cover covenant, which could be breached with increased borrowing required to fund a dividend
- The duration and magnitude of the global financial crisis on research, science and technology expenditure
- The range of investment and technology service opportunities available to the Company as set out in its business plan and agreed with shareholding Ministers and the likely requirement to maintain borrowings to fund such projects

- The increased level of capital expenditure required to maintain the Company's science capability and achieve productivity gains through support services
- The Company's projected need for capital to enhance building and IT systems' infrastructure
- The Company's projected need for strategic investment to accelerate the creation of national benefit by increasing Landcare Research's science competitiveness and shortening lead times of new knowledge and technologies to market

The Board proposes to pay a dividend of up to \$717k in 2010/11 based on 50% of net profit after tax for 2009/10. While the above criteria will guide the payment of dividends in 2010/11 and future years, the Board recommendation will be reassessed according to the shareholders' guidance with respect to the CRI Taskforce Recommendations. In all cases payment is subject to the interest cover covenant being reliably met and operational and capital expenditure not being constrained by cash flow.

11. Shareholder Consent for Significant Transactions

The Board will obtain prior written consent from the shareholding Ministers for any transaction or series of transactions involving full or partial acquisition, disposal or modification of property (buildings, land and capital equipment) and other assets with a value equivalent to or greater than \$10m or 20% of the Company's total assets (prior to the transaction), whichever is the lesser.

The Board will obtain the prior written consent of shareholding Ministers for any transaction or series of transactions with a value equivalent to or greater than \$5m or 30% of the Company's total assets (prior to the transaction) involving:

- Acquisition, disposal or modification of an interest in a joint venture, partnership, or similar association
- Acquisition or disposal, in full or in part, of shares or interests in a subsidiary, external company or business unit
- Transactions that affect the Company's ownership of a subsidiary or a subsidiary's ownership of another entity
- Other transactions that fall outside the scope of the definition of the Company's core business or that may have a material effect on the Company's science capabilities

Intellectual property transactions, wherever possible in advance, will be notified in the quarterly reports to shareholding Ministers.

12. Compensation Sought

No compensation is currently being sought from the Crown.

Where the Government wishes Landcare Research to undertake activities or assume obligations that will result in a reduction of its profit or net worth, the Board will seek compensation sufficient to allow the Company's position to be restored.



Jo Brosnahan
Chairperson
Signed for and on behalf of
The Board of Directors

Dated: 31 May 2010



Alastair Lawrence
Deputy Chair
Signed for and on behalf of
The Board of Directors

Dated: 31 May 2010

Subsidiary and associated companies

- Sirtrack Ltd designs and manufactures radio tracking and related products for wildlife research and a wide range of other applications.
- Landcare Research US Ltd is a holding company registered in the USA for commercial investments in US joint-venture and associate companies.
- Staron LLC is a limited-liability-operating company owned by Landcare Research US Ltd (49%) and Joan Snyder of Hollow Road Farms (51%), a US-based individual. It has been used to carry out research and testing of species-specific toxins.
- Landcare Research International Ltd has been used as the vehicle for investments in Australia. The ongoing need for this entity is currently being reviewed.

Research joint ventures

- Sustainable Land Use Research Initiative (SLURI) is a collaboration between four CRIs.
- New Zealand Agricultural Greenhouse Gas Research Centre (NZAGGRC) is a partnership with AgResearch,

DairyNZ, Lincoln University, Massey University, NIWA, Plant & Food Research, New Zealand Pastoral Greenhouse Gas Research Consortium (PGgRC) and Scion.

- The Centre for Urban Environmental Sustainability (CUES) is an unincorporated joint venture with Auckland University.
- The Centre for Biodiversity & Biosecurity (CBB) facilitates collaboration between Landcare Research and the University of Auckland. The CBB focuses on emerging issues in biosecurity, biodiversity, and the broad area of overlap between these two core outcomes.
- The KiwiImage consortium provides access to improved satellite image information of New Zealand. This five-year programme of investment will underpin new developments in GIS, land-use mapping and, potentially, the measurement of certain aspects of terrestrial ecosystems.
- The New Zealand Climate Change Centre (NZCCC) is a joint initiative by CRIs, the University of Canterbury and Victoria University of Wellington. NZCCC's goal is to enhance the capacity of New Zealand (both domestically and in partnership with other countries) to anticipate, mitigate, and adapt to climate change.

Outcome: Protection and restoration biodiversity

Biodiversity and Conservation

- Reverse the decline in indigenous biodiversity across representative landscapes on publicly and privately owned land.
- Document and characterise our indigenous and introduced biota and make information readily available for resource management.
- Develop national biodiversity assessments and prioritisation systems.
- Increase the efficiency and effectiveness of activities for conserving threatened species, communities and ecosystems.
- Maintain functional ecosystems across an increased range of representative landscapes.
- Establish robust methods for quantifying and monitoring environmental compensation offsets.
- Develop offsetting frameworks and tools to ensure net biodiversity benefits accrue from major development and infrastructure projects.
- Understand the effect of global change on natural ecosystems and the ecological services they support.

Outcome: Strategic choices for land environments

Soils and Landscapes

- Improve our data on soils and physical resources, and delivery of information to enhance decision making by resource managers and policy agencies.
- Improve the basis by which land and water are managed at regional, district and enterprise scales.
- Develop methods to proactively manage landscapes in the long term to preserve options for future generations and sustain high-quality ecosystem services.
- Establish low-cost, easy-to-use, robust methods for resource managers to detect environmental change in soil and water resources.
- Maintain the productive capacity of soils by reducing the impacts of contaminants and off-site effects of soil management practices.
- Avoid and reduce both on- and off-site impacts of rural and urban land use, and ensure strategies and tools for mitigation are widely used.
- Encourage and facilitate use of intergenerational development strategies and planning tools by central and local government bodies and private and public enterprises to gain long-term social, economic, environmental and cultural advantages.
- Develop frameworks and initiate market-based instruments for ecosystem services such as water, nutrients, biodiversity and carbon.
- Pilot an 'Environment Lab' to engage science, policy and business (and industry) in strategic land-use decisions.

Outcome: Sustainable business and communities

Sustainable Business

- Develop scenarios and tools to enable regional economies and business sectors to operate within natural environmental limits.
- Provide products and services to businesses, helping them achieve resource use efficiency, reduce waste, comply with legislation, and increase profitability.
- Explore the application of market-based instruments for ecosystem services, in order to enhance the sustainable use of natural resources, their economic return, and lower the cost of externalities.
- Improve the sustainability performance of public and private sector enterprises.
- Improve economic performance in a sustainably competitive tourism sector.

Low Impact Environmental Urban Development (Built Environments)

- Improve urban environmental management by reducing waste and energy use.
- Integrate developments across scales – household, subdivision, catchment or region – to optimise ecological values in urban areas.

Outcome: Managing invasive weeds, pests and diseases

Biosecurity and Pest Control Technologies

- Improve surveillance, detection and monitoring methods to minimise incursions, prevent pest establishment and manage existing pests.
- Develop effective and socially acceptable new and improved control technologies and tools that are used by agencies for incursion response and pest management.
- Eliminate incursion and establishment of invasive species and reduce the impact of vertebrate, invertebrate and plant pests on ecosystems and indigenous species.
- Improve predictive risk assessment and management models used by agencies to determine their priorities, the nature and scale of responses to incursions and pest establishment, and planning existing pest management.
- Support free-trade agreements by providing training and advice to develop in-country biosecurity capabilities.

Outcome: Multiple benefits from climate change

Greenhouse Gases / Global Change Processes

- Develop national greenhouse gas emission inventories that meet IPCC best practice.
- Develop robust mitigation and adaptation strategies at a range of scales and land-use intensities that increase economic and other opportunities from emerging greenhouse credit trading markets, especially with respect to biosequestration of carbon in soils and plants.

- Establish practices and technologies to reduce greenhouse gas emissions.
- Use robust carbon, nitrogen and greenhouse gas accounting tools, and mitigation strategies that also benefit indigenous biodiversity or reduce global change impacts.
- Provide leadership on positive responses to climate change by assisting enterprises and institutions to measure, manage and mitigate their greenhouse gas emissions through initiatives such as the carboNZero^{Cert™} programme.

Outcome: Sustainable Māori economic development

- Facilitate long-term strategic relationships to accelerate

Māori economic development by positioning Manaaki Whenua as the leading provider of land development advice for Māori through our tools, research and science capability.

- Increase Māori research capacity through linkages with external research providers and building world-class science careers for our Māori scientists.
- Facilitate indigenous research opportunities with First Nation peoples through technology and knowledge transfer, to support Māori economic development.
- Provide management-based tools that meet the needs of landowners.

Appendix III: Business Policies

Statutory policies are outlined here. All other policies, e.g. Sustainability and Code of Ethics, are on our website.

Statutory requirements policy

The purpose and operating principles of Landcare Research are as defined for CRIs in the Crown Research Institutes Act 1992. They are:

- To undertake research for the benefit of New Zealand.
- To pursue excellence in all its activities.
- To comply with any applicable ethical standards.
- To promote and facilitate the application of the results of research and technological developments.
- To be a good employer.
- To exhibit a sense of social responsibility by having regard to the interests of the community, while remaining financially viable and earning an adequate return on shareholders' funds.

Human resource policy

Employee well-being

Provide a healthy, safe and secure work environment through full application of appropriate management practices to ensure proactive compliance with the Health and Safety legislation and to reduce the already low level of accidents, lost-time injuries and ACC costs.

Support flexible work practices and conditions which encourage a balance between work, life and family needs. Continue providing a measure of income security to staff in the event of accident or illness through income maintenance and death insurance benefits.

Selection and development

Recruit and promote the most suitable and highest calibre staff through open merit-selection processes that will concurrently facilitate achievement of our EEO goals.

Continue to invest substantially in advancing the technical, management and leadership skills of our staff to improve capability and provide for career development and/or progression.

Increase Landcare Research's bicultural capability through training, seminars and a tool kit to support effective Māori engagement.

Performance management, recognition and reward

Continue with our practice of remunerating on the basis of performance and the Company's ability to pay, through a combination of profit-linked universal payments and merit-based individual payments.

Continue to enhance our performance appraisal system and development of objective performance output measures for staff that can be applied to assess both individual and team performance.

Explore innovative and flexible ways of recognising and rewarding scientific/professional staff, particularly for team performance.

Employment relations

Promote an employment relations environment consistent with the vision, goals and values of the organisation and the context of the legal framework. Our focus is on:

- Consistent and fair treatment of all employees
- Openness, honesty and access to information
- Accountability for the employment relationship by both parties
- Effective partnerships with union representatives and delegates

Technology sale and licensing policy

Technology will not be licensed or sold internationally unless, in the opinion of the Board, such sale or licensing is clearly to the benefit of New Zealand, having considered whether:

- New Zealand businesses are able and willing to take up the technology
- International sale or licensing will ensure that the Company is able to retain the strategic scientific resource responsible for creating the technology
- The sale or licensing of the technology will not adversely affect New Zealand's trade interests internationally

Intellectual property policy

Landcare Research will seek to commercialise, where appropriate, technology based on intellectual property created from its research. When commercialising technology we will seek, as appropriate, to recognise the inventor/s:

- Where a joint-venture research agreement is set up with the possible outcome of a joint-venture business the Board will consider, on a case-by-case basis, the appropriate provision for equity or equity options by the key staff of the joint-venture parties.
- Where intellectual property is commercialised or sold outright the Board will consider, on a case-by-case basis, an appropriate return to the inventor.

Policy for treatment of items with covenants

Landcare Research owns properties subject to claims under the Treaty of Waitangi, caveat obligations under section 40(2) of the Public Works Act 1981, covenants on the disposal of identified databases and reference collections, and certificates of easements obligations. These will be managed in accordance with statutory requirements and obligations under the Transfer Agreement with the Crown.

Cash management policy

The Board of Directors has resolved that surplus cash be placed on varying term deposits and at call with institutions which have a minimum Standard and Poor's rating of A+, and that no more than \$4.0m is to be invested with any one institution at any given time. To avoid significant foreign exchange risk, the Company will buy forward cover for individual transactions that are above \$50,000 in NZD equivalent. The Company will not hold more than AUD100,000 and USD200,000 at any one time. These figures exclude funds passing through the Company (e.g. funds held on behalf of subcontractors).

Debt policy

Debt will be kept to levels within the range recommended in the Capital Structure Plan.

ACCOUNTING POLICIES

Financial statements are prepared in accordance with generally accepted accounting practice and comply with

relevant provisions in the Financial Reporting Act 1993. Details of the accounting policies and their application are below. The estimated impact relating to the implementation of International Financial Reporting Standards with effect from 1 July 2007 has been incorporated.

General accounting policies

The measurement and reporting of profit and financial position is based on historical cost.

Particular accounting policies

The following particular accounting policies, which materially affect the measurement of profit and financial position, have been consistently applied.

Accounting period

The consolidated financial statements are those of Landcare Research New Zealand Ltd, including its fully owned subsidiaries Sirtrack Ltd and Landcare Research International Ltd, for each financial year ended 30 June.

Statement of cash flows

The terms used in the statement of cash flows are defined as follows:

- (i) Cash means coins and notes, demand deposits and other highly liquid investments in which the Company has invested as part of its day-to-day cash management. Cash includes liabilities which are the negative form of the above, such as the bank overdraft. Cash does not include accounts receivable or payable, or any borrowing subject to a term facility.
- (ii) Investing activities are those activities relating to the acquisition, holding and disposal of fixed assets and of investments. Investments can include securities not falling within the definition of cash.
- (iii) Financing activities are those activities which result in changes in the size and composition of the capital structure of the Company and include the cost of servicing the equity capital.
- (iv) Operating activities include all transactions and other events that are not investing or financing activities. Interest and dividends received and interest paid are included in operating activities.

Revenue

Revenue shown in the Statement of Financial Performance comprises amounts earned by the Company for goods and services supplied to customers in the ordinary course of business.

Income received for goods and services which have not been supplied to customers is recognised as revenue in advance.

Current assets

- (i) Accounts receivable
Accounts receivable are valued at expected net realisable value.
- (ii) Stocks
Stocks are valued at the lower of cost on a weighted average price of stock on hand, or net realisable values. In the case of manufactured goods, cost includes direct materials, labour and production overheads.
- (iii) Work in progress
Costs incurred for the supply of goods and services but not billed against customers are recognised as work in progress.

Fixed assets

Completed buildings, plant, motor vehicles, furniture and tools are recorded at cost, less accumulated depreciation. Land and buildings under construction are recorded at cost.

National databases and reference collections

National databases are not valued. Reference collections are valued in accordance with FRS-3, and form part of the 'restricted equity' against which performance targets will not be measured.

Distinction between capital and revenue expenditure

Capital expenditure is defined as all expenditure on the creation of a fixed asset, and any expenditure which results in a significant improvement of the original function of a total asset. Revenue expenditure is defined as expenditure which restores an asset to its original condition and all expenditure incurred on maintaining and operating the Company.

Depreciation

After taking into account likely residual values, all depreciable assets are depreciated on a straight-line basis over their estimated economic lives.

Depreciation rates

Buildings	1.67–10%
Plant and equipment	5–20%
IT equipment	25%
Motor vehicles	25%
Furniture and fittings	10%
Office equipment	20%
Library books & periodicals	20–50%
Rare Books collection	1%

Leased assets

The Company leases certain plant & equipment and land & buildings.

Finance leases, which effectively transfer to the entity all of the risks and benefits incidental to ownership of the leased

item, are capitalised at the present value of the minimum lease payments. The leased assets and corresponding liabilities are disclosed and the leased assets are depreciated over the period the entity is expected to benefit from their use. Operating lease payments, where the lessors effectively retain substantially all the risks and benefits of ownership of the leased item, are included in the determination of the operating profit in equal instalments over the lease term.

Research and development costs

Research and development costs are expensed in the period incurred. Development costs are deferred where future benefits are expected to exceed those costs. Deferred development costs are amortised over future periods in relation to expected future revenue.

Intellectual property

No value is ascribed in the Statement of Financial Position to intellectual property assets. Revenue received from the use of intellectual property assets is recognised when earned, and the costs incurred in the maintenance of intellectual property assets are expensed when incurred. Costs incurred in respect of protecting the value of intellectual property (by way of patents) will be capitalised and amortised over future periods in relation to expected future revenue.

Taxation

Taxation is provided in the financial statements on the basis of the estimated taxation payable on the taxable income by each member company of the Group, after taking advantage of all available deductions and concessions. Deferred taxation resulting from timing differences is recognised using the liability method on a comprehensive basis. A deferred tax benefit arising from timing differences is only recognised if there is a virtual certainty of realisation.

Foreign currency translation

Transactions denominated in a foreign currency will be recorded using the exchange rate at the settlement date, except for transactions subject to forward cover contracts, where the forward rates specified in those contracts will be used. Realised and unrealised gains or losses on foreign currency transactions are dealt with in the Statement of Financial Performance. Foreign currency balances are converted at the mid-TT rate applying at balance date.

Financial instruments

Revenue and expenses in relation to all financial instruments are recognised in the Statement of Financial Performance. Financial instruments carried on the Statement of Financial Position include cash and bank balances, investments, receivables, trade creditors and borrowings. These instruments are, generally, carried at their estimated fair value.

Principle of consolidation

The consolidated financial statements include those of the holding company and its subsidiaries accounted for using the line-by-line consolidation method. All intercompany transactions, balances and unrealised profits and losses on transactions between group members have been eliminated.

Changes in accounting policies

Any changes in accounting policies and the effect on retained earnings will be disclosed.

Appendix IV: Definitions

STAFF COMPOSITION

Total number of FTEs

The total number of staff members employed within a CRI (calculated as full-time equivalents), including fully owned subsidiaries, but not including other companies in which the CRI has only part-ownership.

Research teams

Staff members directly involved in the production of specified research outputs.

Research support

Staff members whose work logistically supports the outputs of the research teams but whose work could not of itself be described as research, for example IT support staff, laboratory assistants, librarians, research report editors, general nursery and workshop staff.

Other FTEs

Staff members whose activities support the generic, non-research or infrastructural (management and general support) component of the CRI, for example management, business development, technology service, financial, HR, secretarial, stores, ground and building maintenance, marketing and communications/PR.

PUBLICATIONS

The measures below are primarily to do with the dissemination of research results. If the primary purpose is to facilitate a service for users, the measure is not included.

Commissioned reports to users

Reports for users commissioned under contract or other formal arrangement.

Presentations on technical information and research results

Papers, oral presentations, static displays, web presentations that are:

- Presented at a venue where users are present, e.g. a conference, workshop, training course, seminar, field day or hui, and
- Involve contact with users.

Publications on technical information and research results

These publications are not peer-reviewed and aim to disseminate technical information and research results to users, such as:

- Papers in trade journals, magazines, series or books
- Conference papers and abstracts
- Research monographs or books
- Popular books/articles
- Web-based publications (includes websites, downloadable files, etc.)

Includes industry publications, Landcare Research's own publications, and web-based publications intended for users.

Peer-reviewed articles

A peer-reviewed journal article that requires a rigorous quality assurance by peers before publication. This includes publications that have been accepted for publication (i.e. in press).

Keynote and plenary presentations

A keynote or plenary presentation is any written or oral presentation delivered at a recognised forum where the CRI representative is invited and costs are paid in full or in part.

FINANCIAL

Revenue

Includes science research, contract work for the Crown or commercial clients, royalties, licence fees, etc., plus income from the sale of produce and the lease of assets. It excludes income from capital gains, dividends, foreign currency gains/losses and interest on investments.

EBIT

Earnings before interest, financial lease charges and tax, and after committed business development expenditure and technology service expenditure. EBIT margin = $\text{EBIT} \div \text{Revenue}$, expressed as a percentage.

Return on equity

NPAT is net profit after tax. Shareholders' funds include share capital and retained earnings.

Return on equity = $\text{NPAT} \div \text{Average shareholders' funds}$, expressed as a percentage.

NPAT excluding the cost of extraordinary restructuring costs is used to calculate return on equity.

Equity ratio

Equity ratio = Average shareholders' funds ÷ Average total assets.

Quick ratio

Quick ratio = (Current assets – Inventory) ÷ (Current liabilities – Current staff liabilities).

Gearing

Financial debt includes all interest-bearing liabilities.

Gearing = Net financial debt ÷ Net financial debt + Shareholders' funds, expressed as a percentage.

Interest cover

Interest cover = EBIT ÷ Interest paid

Appendix V: Science Capability Management to Increase National Benefit

Portfolio / Team	Science & technology developments	Capability maintenance and development
Biological Systems		
Biosystematics	Online 'taxonomy'	Integration of biosystematics capability with cross-organisational informatics strategy
Biodiversity & Conservation	Consolidation of biodiversity science, continuing developments in biodiversity offsetting and markets, biodiversity performance measurement, repositioning invasive invertebrate capability, continuing commercial development of 'EcoGene™'	Invasive invertebrate ecology, ecological economics, leadership succession
Ecosystem Processes	Consolidation of biodiversity science, biodiversity performance measurement, nutrient cycling in forest systems (including carbon storage)	Mycorrhizal ecology, leadership succession
Wildlife Ecology & Epidemiology	National Tb strategy, international pest management	Stakeholder secondments, 'Invasive Species International'
Pest Control Technologies	Pest-specific toxins (new technology platforms and associated product development), social acceptability of pest control, alternatives to 1080	Leadership succession, stakeholder secondments, increased engagement with Invasive Animals CRC
Environment & Society		
Informatics	Portal-based business services for nationally significant databases (e.g. S-map); spatial database interoperability over the advanced network; 4D visualisation of environmental data (space and time) – ScenzGRID, etc.	Continue to build world-class capability and networks in geospatial data, high-speed computing and data networks, supporting innovation in delivery of science
Soils & Landscapes	Land-use practices on water availability and quality; soil microbial processes; landscape futures modelling; nitrogen:carbon pathways; soil health indicators; remote sensing sensor-nets	Build world-class standing in soil and landscape process science, and application of ecosystems services concept in policy and resource management
Global Change Processes	Carbon dynamics in soil-plant systems; GHG mitigation technologies; adaptation strategies including multi-scale economic, social, environmental integration; GHG inventory in various economic sectors	Restore leading capability in carbon science, building succession and strength in mitigation and adaptation technologies
Built Environment, Sustainability & Society	Business-environment management tools (e.g. lifecycle costing); market instruments (e.g. tradable rights); governance tools (e.g. futuring for agility); community resilience and adaptiveness tools; Māori engagement	Build on Foundation bidding successes (results in July) to enhance integration across disciplines and futuring/scenarios capability to world-class level

(*indicates that the database/collection has been identified by the Foundation for Research, Science & Technology (Nationally Significant Public Good Science Fund Database and Collections, 1996) as being of 'significant national importance'.)

ECOLOGY (LINCOLN):

*National Vegetation Survey databank**

Electronic database and archive for field data sheets, maps, photographs. The National Vegetation Survey Databank (NVS) is a physical archive and computer databank containing records from approximately 77,000 vegetation survey plots, including data from over 19,000 permanent plots. NVS provides a unique record, spanning >50 years, of indigenous and exotic plants in New Zealand's terrestrial ecosystems, from Northland to Stewart Island and the Kermadec and Chatham islands. A broad range of habitats are covered, with special emphasis on indigenous forests and grasslands.

The physical archive includes plot sheets, maps, and photographs from many years of vegetation surveys. DOS-based software that was specifically prepared for summarising data and statistical analysis is available, and development of a new software package is underway.

The original surveys were conducted by the New Zealand Forest Service, Department of Lands & Survey, and the DSIR Botany Division. Ongoing surveys and research by the Department of Conservation, regional councils, universities, private consultants and Landcare Research are constantly providing new data to NVS. Such widely sourced information collated in one databank is part of the value of NVS to New Zealand. At the same time, the interests of data providers are protected through written agreements that determine access rights to specific datasets within NVS.

INVERTEBRATE BIOSYSTEMATICS (AUCKLAND):

New Zealand Arthropod Collection (NZAC), including New Zealand National Nematode Collection (NZNNC)**

NZAC is the world's foremost collection of New Zealand insects and related arthropods, with about one million pinned specimens and another six million kept in ethanol. NZAC also includes substantial South Pacific collections held in trust for Pacific nations, and additional reference collections from Australia and the rest of the world.

NZNNC is New Zealand's main nematode collection, containing about 60,000 specimens. Part of the collection is on a computer database. In 1992 NZNNC became a component of NZAC.

Associated databases include:

NZACbugs, BUGS bibliography, Pacific database*

NZACbugs contains about 30,000 records for approximately

65,000 specimens and 10,000 arthropod names, including at least 1,400 species of economic and conservation importance, e.g. wetas, porina moths, large weevils, and type species. About 60% of records are kept in individual files (e.g. dBase, Excel), later to be migrated to the Collections Information System, which is in the final stages of development. BUGS bibliography contains about 16,000 records in the public domain concerned with the non-marine invertebrates of the New Zealand sub-region 1775–1993, both native and introduced. This historical literature is now available in searchable and downloadable form at www.bugz.org.nz. Pacific database contains information about pest insect species of the Pacific, created in collaboration with UNDP/FAO-SPEC and being made available on the SPC and FAO (www.ecoport.org) websites.

FUNGAL & BACTERIAL BIOSYSTEMATICS (AUCKLAND):

*New Zealand Fungal and Plant Disease Herbarium (PDD)**

PDD is the national collection of dried fungal specimens, comprising about 90,000 specimens of fungi, including 2,200 type specimens (1,400 of New Zealand fungi). In addition to fungi of New Zealand, there are also significant holdings of fungi from most nations of the South Pacific along with additional international holdings. Data of all specimens are available online (NZFungi database – see below).

*International Collection of Micro-organisms from Plants (ICMP)**

ICMP contains about 16,000 live cultures comprising 7,000 strains of plant pathogenic bacteria sourced worldwide (a major international collections for these bacteria) and 9,000 strains of fungi, particularly from New Zealand and the South Pacific. Most cultures are stored in liquid nitrogen. Data of all cultures are available online (NZFungi database – see below; and Web-accessible catalogue).

Associated databases include:

*NZFungi Database**

This database contains records of all names used for fungi and plant-related bacteria and viruses in a New Zealand context, the synonymy of those names and the current preferred name, along with publication details, fungal specimens in PDD, cultures in ICMP, distribution data, and literature records supporting the use of these names in New Zealand, and associated host plants. It also contains descriptions, taxonomic keys, and images of many of these fungi. It incorporates the Pacific database containing details of fungi recorded, mainly as plant diseases, from American Samoa, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Niue, Palau, Samoa, Solomon Islands, Tonga,

Tuvalu, and Vanuatu. The database also contains data on strains of plant-associated bacteria held in the ICMP culture collection. NZFungi currently (16 February 2010) contains information on:

- 89,586 dried fungal specimens (PDD collection)
- 17,352 living bacterial and fungal cultures (ICMP culture collection)
- 34,285 names and their synonymy, all with authoritatively researched and cited publication details (14,600 of the names have been used in New Zealand context)
- 10,931 published articles
- 14,195 images
- 5,110 descriptions
- 211 published keys (plus several test interactive keys)

PLANT BIOSYSTEMATICS (LINCOLN):

*Allan Herbarium (CHR)**

This is the largest herbarium in New Zealand, with over 600,000 specimens, and forms part of the New Zealand National Herbarium Network. Two-thirds of the specimens are of indigenous plants with the remainder divided between naturalised, cultivated, and foreign specimens. The Herbarium contains the largest collections from the subantarctic islands, the largest bryophyte collection in the Southern Hemisphere, and the second-to-largest collection from the Pacific Islands. At least 741 type specimens of vascular plants have been identified, including isotypes of primary types held at other institutions. The number of types of cryptogamic plants is not known, but with collections of R. Brown ter., T.W.N. Beckett, G.O.K. Sainsbury, and E.A. Hodgson (bryophytes), J.S. Thomson and H.H. Allan (lichens), V.W. Linauer and L.B. Moore (marine algae), the total number of types is probably in excess of 1,200. The Herbarium also has specialist collections of seed, fruit, wood, plant leaf cuticle, liquid-preserved specimens, and microscope slides. The oldest samples are the 91 duplicate specimens collected by Banks and Solander during Captain Cook's first voyage to New Zealand, 1769–1770.

Associated databases include:

The Plant Names Database lists over 43,200 names, including synonyms and incorrectly applied names. The database indicates which of the names are preferred for use at the Allan Herbarium (CHR), and provides information on the biostatus and the authorship of the taxa. It contains data for lichens, liverworts, mosses, ferns, freshwater algae and seed plants in New Zealand. Additional biodiversity information on New Zealand flora provides users with descriptions from recent taxonomic revisions, relevant keys and bibliographic information on the use of names in research publications. The database

also provides vernacular and Māori names, and images. Editorial work on the Plant Names Database is ongoing. As new treatments, taxa and naturalisations are published these are added to the database.

The Allan Herbarium Specimen Database provides the label information from the herbarium specimens held at the Allan Herbarium. The largest database at the herbarium, it currently contains c.197,000 records, or approximately 32% of the herbarium specimens. Specimens are added to the database according to research and conservation priorities.

The data from the Plant Names Database and the Allan Herbarium Specimen Database are made available on the **Ngā Tipu Aotearoa – New Zealand Plants** website.

Other databases at the herbarium are used to assist in the management of the collection (e.g. the Loan and Cabinets databases), track ancillary collections (e.g. Type Photo Database), or record other biodiversity-related data (e.g. a bibliographic database; database of cultivated woody plants, approximately 2,500 records).

'NGĀ TIPU WHAKAORANGA' ETHNOBOTANY DATABASE AND NEW ZEALAND FLAX AND LIVING PLANT COLLECTIONS*

The fully searchable ethnobotany database 'Ngā Tipu Whakaoranga' contains 2,050 records with many thousands of items of sourced, detailed information on cultural uses of New Zealand native plants, fungi and algae (including some 500 records on *Phormium*). The database includes a comprehensive list of Māori names for taxa. Images are being added to plant records to aid identification and highlight plant features of cultural relevance. Plant records are linked to the New Zealand Plants database (as above) to enable ready access to taxonomic information. Editorial work is ongoing.

The National New Zealand Flax Collection, held at Lincoln, is a living collection of approximately 160 *Phormium* cultivars of cultural and historical interest (mostly selected for their leaf and fibre qualities for use in weaving and commerce); a representative collection of 60 PVR cultivars (ornamentals); and some 80 provenances that represent the range of morphological and genetic forms found in the wild. Another significant living collection is the *Cordyline* (cabbage tree) collection, comprising 20 trees of each of 30 provenances, grown from seed. There are three replicates of this collection – at Lincoln, Invermay and Auckland – representing different growing environments.

LAND MANAGEMENT DATABASES (PALMERSTON NORTH, LINCOLN):

*Land Resource Information System (LRIS), including New Zealand Land Resource Inventory (NZLRI) and National Soils Database (NSD)**

NZLRI is a national database compiled at a scale of 1:63,360 (and updated to a scale of 1:50,000 in Northland, Wellington, and Marlborough regions) depicting general land characteristics in terms of a resource inventory (rock, soil, slope, erosion, and vegetation), a derivative general purpose land evaluation (land

use capability), and a range of management and production indices including site index of *Pinus radiata*, stock carrying capacity and fertiliser requirements.

The NSD is the national archive of information about soils at specific sites. Data comprise soil profile and site descriptions and chemical, physical, and mineralogical characterisations of soils. There are 1,500 described and analysed soil profiles in the database, selected from 1,700 different soils located throughout New Zealand.

Appendix VII: Policy for Access to National Databases and Reference Collections

Landcare Research will provide access to the basic data in all its national databases and reference collections listed in Appendix VI, except where that access is clearly not to the benefit of New Zealand.

Extraction for public good or personal use

In accordance with the terms of the Transfer Agreement, no charge is made for the basic data in these 'public' databases and collections, but charges may be made for the extraction of such data. This charge is designed to recover costs of labour, equipment and reasonable expenses. For simple queries (e.g. a record listing), charges are nominal. For more complex queries, where considerable manipulation of the data is required to satisfy the client's request (analyses and interpretive plots for example), costs could be significant.

Digital subsets of the databases are often made available under a licensing agreement which recognises Landcare Research's ownership of the data and may place some restrictions on its use.

Extraction for private good or commercial use

Where the information is to be used by a client for commercial purposes (i.e. passed on to a third party who will be charged for that information), Landcare Research reserves the right to approve access to such information on a priced basis consistent with the Principles of Operation specified in Sections 5(1) and 5(2) of the Crown Research Institutes Act 1992. Should Landcare Research agree to release such information, it will charge the client at an appropriate commercial rate based on the quantity of information, analysis required, level of interpretation and form of delivery/presentation.

Appendix VIII: Agency-to-Agency International Science and Technology Agreements

Hawai'i Conservation Biology Initiative

Landcare Research is the lead agency for a technical exchange agreement with research and land management agencies in Hawai'i, via the Hawai'i Conservation Biology Initiative as the counterpart lead agency. Each party covers its own major costs of travel and accommodation.

Land Use Modelling and Analysis Network

A collaboration with University College Dublin and the Flemish Institute for Technological Research (VITO), Belgium, to develop, design and transfer decision support modelling for land use management.

Administración de Parques Nacionales, Argentina

A Memorandum of Understanding between Landcare Research and the Argentine National Parks Administration was signed in April 2009, formalising a relationship focused on protected areas and invasive species management. The parties have agreed to cooperate, to share information, to collaborate on training initiatives and to exchange specialists. Promoting and developing research to underpin invasive species management

and ecological restoration, and identifying priority conservation areas, are identified as areas of mutual interest. There is a specific clause for the provision of advice and support on a contractual basis. This relationship continues to evolve, based mainly on Landcare Research's ongoing advice as a bi-national (Argentina and Chile) project to eradicate North American beavers from southern Patagonia is developed.

Arthur Rylah Institute for Environmental Research, Department of Sustainability and Environment, Victoria, Australia

An agreement to underpin joint development and management of capabilities in vertebrate pest ecology and ecological modelling.

Grupo de Ecología y Conservación de Islas, A.C., Ensenada, Baja California, Mexico

An agreement to formalise our intent to jointly pursue funding opportunities for island pest eradications and associated ecological restoration activities.

13. Directory

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Katrina Direen: General Manager People & Performance
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