



# **Cooperation for Mutual Benefit: Opportunities for Primary Industry and the New Zealand Department of Conservation**

Prepared by  
**Jill N. Ozarski**

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1 May 2015: After a day touring Poutiri Ao ō Tāne: Ruud Kleinpaste (“The Bugman”), Denise Fastier (DOC), the author (8 months pregnant), and Melissa Brignall-Theyer (DOC). Photo credit Ruud Kleinpaste



28 June 2015: Mom, Dad, and 6-day-old Adelaide in our Wellington apartment. Photo by Christophe Gachiniard

Jill N. Ozarski  
Wellington, July 2015

## EXECUTIVE SUMMARY

Imagine that you are part of the agency responsible for managing a third of the country – including some of the rarest species on the planet, stunning scenery and recreational resources that are sought out by national and international visitors, and the water sources for much of the nation – for the benefit of present and future New Zealanders.

Now imagine that you are part of the production industry that uses a third of the country to fuel the nation’s economy and produce food and fibre valued around the globe for its connection to clean, green New Zealand.

*Isn't there a natural nexus for these two organisations – the New Zealand Department of Conservation and primary industry – to partner up to conserve the nation’s natural resources?*

I wrote this report to tell the story of existing public-private sector partnerships and perceptions between the New Zealand Department of Conservation (DOC) and primary industry, including lessons learned, opportunities for the future, and comparison with a relevant partnership example in the United States. I also interviewed representatives of primary industry to reveal a set of common themes that indicate important operational details for DOC and industry to consider.

This report includes case studies of the following public-private sector partnerships in New Zealand:

- **Poutiri Ao ō Tāne** – Returning native species to conservation land and surrounding production landscapes, *Hawke’s Bay region*
- **Project Aorangi** – Energising the community to eliminate pests and restore native birds while maintaining recreational hunting opportunities on conservation land and surrounding pastures, *South Wairarapa coast*
- **Nelson Forests and Mount Richmond Forest Park:** Working together to address wilding pines, *South Marlborough region and the Richmond Range*
- **Ruamahunga Cut-Off and the Wairarapa Moana Wetlands Restoration Project:** Restoring wetlands on private pasture in a 50-50 partnership with farmers, *Lake Wairarapa and Lake Onoke and surrounding wetlands, Wairarapa plains*
- **Living Water Programme:** A partnership with Fonterra and DOC to improve five sensitive water catchments in dairying regions across the country
- **Marlborough New Zealand Falcon Conservation Programme (formerly Falcons for Grapes):** An unsuccessful attempt to partner with the winegrowing industry to restore rare falcons to vineyards, *Marlborough region*

For context, and to compare organisational details and clear links to ecosystem services, this report also includes one case study from the United States – “Forests to Faucets” – which reviews the public-private partnership structure that is working to restore forest and watershed health to protect urban water supplies in Colorado.

## **Conclusions and Recommendations**

There is tremendous opportunity for DOC to continue and expand partnerships with primary industry. The case studies and industry interviews show that there is interest by industry and important conservation gains to be made from doing so.

I organise the findings and recommendations for operational details into the three “phases” of a partnership for DOC:

- A. Prospect Phase:** Proactive ideas for who, how, and what message to use when considering new potential primary industry partnerships.
  - Targeting and looking for opportunities – be proactive and approach potential partners with shared values
  - Approaching a potential partner – consider using a “go-between” or messenger and establishing a Business Leadership Council
  - The Key Message – focus on conservation
  - Analyse DOC capacity before making commitments
  - Adopt an open and pragmatic approach
  - Be cautious – protect your reputation
- B. Start-Up Phase:** Operational details to have in place up-front and before work begins.
  - Be clear on common goals and operating procedures and implement strong project management techniques from the beginning
  - The culture clash is inescapable, but both parties have a responsibility to compromise
- C. Implementation Phase:** Critical components to have in place over the life of the partnership.
  - Measurement and associated research is critical
  - You can’t say thank you enough

The report concludes with recommendations for New Zealand primary industry, including more public-private partnerships and how to evaluate business risks and opportunities related to ecosystem services.

A secondary goal of my research was to look at whether and how the quantified concepts of natural capital and ecosystem services applied to decision-making by business about public-private sector partnerships. Although I looked hard, it appears that economic calculations and “bottom-line” numbers were not an important factor for any of the case studies or industry interviews. Instead, partners were motivated by other factors such as personal relationships, a shared appreciation and dedication to the land, and being a good neighbour or corporate citizen.

If there is one take-away message that applies to this entire report, it is that *relationships matter*. Partnerships are like any other human relationship, and are based on people, personal interactions and mutual respect.

New Zealand has an opportunity to set a model for the world in how to build a sustainable natural environment and economy, and it is my hope that these case studies and insights can support even more public-private partnerships that are a win-win-win for the agency, industry, and the general public.



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# 1 INTRODUCTION

I wrote this report to tell the story of existing public-private sector partnerships and perceptions between the New Zealand Department of Conservation (DOC) and primary industry, including lessons learned, opportunities for the future, and comparison with a relevant example in the United States (US). The following stories and recommendations will highlight the operational details that can be replicated and thus create a win-win-win scenario for the agency, industry, and the general public.

A secondary goal of my research was to look at whether and how the concepts of *natural capital*<sup>1</sup> and *ecosystem services*<sup>2</sup> apply to decision-making regarding public-private sector partnerships. Therefore, the case studies and recommendations highlight the conservation and private-sector benefits obtained by both partners, as well as the motivations of the private sector to get involved.

The focus on partnerships and collaboration is growing in both the US and New Zealand as the new way of doing business. Gone are the days of natural resource agencies expecting to act alone and still being able to meet all of their goals. In fact, DOC has already been working in partnership with other organisations such as iwi, business (i.e. permittees), other agencies and hundreds of community organisations for many years. However, recent DOC reorganisations have put even more emphasis on new and expanded partnerships, especially with business and the private sector.

DOC's vision is "*New Zealand is the greatest living space on Earth*", thus ensuring that New Zealanders gain environmental, social, and economic benefits from healthy functioning ecosystems, recreation opportunities, and from living our history. DOC organises its work around five outcomes:

- The diversity of our natural heritage is maintained and restored
- Our history is brought to life and protected
- New Zealanders and our visitors are enriched by outdoor experiences
- New Zealanders connect *and contribute to conservation* [emphasis added]
- *Every business fosters conservation for this and future generations* [emphasis added]

These outcomes clearly emphasise the value of partnerships and the need to expand responsibility for conservation so that it becomes a responsibility of all New Zealanders. However, whilst the partnership approach has great value, it is critical that it be approached, designed, and implemented in a way that works well for all parties.

*Partnerships are the right notion, but the inner workings need to be evaluated.*  
–Clive Paton, Ata Rangi Vineyards

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<sup>1</sup> Natural capital can be defined and measured in different ways, but one example is "our 'stock' of water, land, air, species, minerals, and oceans. This stock underpins our economy by producing value for people, both directly and indirectly, such as food, clean air and water, energy, wildlife, recreation, and protection from hazards." UK Natural Capital Committee (2014)

<sup>2</sup> Ecosystem services are the benefits people receive from ecosystems, including: provisioning services such as food and water; regulating services such as flood and disease control; cultural services such as spiritual, recreational, and cultural benefits; and supporting services such as nutrient cycling that maintain the conditions for life on Earth. Millennium Ecosystem Assessment (2003)

## **What is a public-private sector partnership and why are they growing in popularity?**

For the purposes of this report, I define “public-private sector partnership” as a national natural resource agency joining forces with a private sector business whereby both parties contribute financial support (cash, land, or in-kind services) to generate on-the-ground conservation that would not have happened otherwise.

While DOC has worked with partners for many years, large commercial public-private partnerships are a relatively new focus. DOC has a few large commercial partnerships with businesses such as Fonterra, New Zealand Aluminum Smelters, Genesis Energy, and Dulux New Zealand, although perhaps the highest profile is with Air New Zealand.

The Air New Zealand partnership began with the airline providing safe and free air travel for threatened species for relocation and conservation programmes around the country. Now, there is a three-year partnership in place to promote DOC’s nine Great Walks,<sup>3</sup> with Air New Zealand providing marketing services worth approximately \$1 million per annum.<sup>4</sup> Through this effort and DOC’s coordinated work, use of the Great Walks increased by over 20 per cent<sup>5</sup> and generated an additional \$1 million in total revenue. Although this increase did not apply universally to all the Great Walks, it did attract more visits overall – in particular by New Zealanders – and engaged many more people through social media<sup>6</sup> and is viewed as a success by both partners. The partnership was recently extended to 2017 and will also include promotion of marine conservation and marine reserves.<sup>7</sup>

There are similar examples of large commercial partnerships in the US, one of which is described as a case study later in this report. Another example of a US public-private partnership is between the US Forest Service and Vail Resorts, which is facilitated by the not-for-profit National Forest Foundation. Vail Resorts owns and operates eleven premier ski resorts in Colorado, California, Nevada, Utah and elsewhere, many of which operate on US Forest Service land. Vail has contributed substantial funding to on-the-ground projects on US Forest Service land across Colorado – mostly in the White River National Forest where their Colorado ski areas are located – through the National Forest Foundation, including:<sup>8</sup>

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<sup>3</sup> [greatwalks.co.nz](http://greatwalks.co.nz)

<sup>4</sup> *PHV Case Study #1: Gaining Altitude... DOC’s Great Walks and the Air New Zealand partnership* (2015).

<sup>5</sup> As measured by an increase in overnight stays, with approximately 8,000 more people booking at least one night per year over a two-year period. The promotion fell short of the goal of attracting an additional 10,000 people per year, but was still significant.

<sup>6</sup> The Great Walks promotional campaign attracted 250,000 Twitter followers and 737,000 Facebook likes.

<sup>7</sup> *PHV Case Study #1: Gaining Altitude... DOC’s Great Walks and the Air New Zealand partnership* (2015).

<sup>8</sup> *Vail Resorts – National Forest Foundation – a case study in Public-Private Partnership* (2015)

- Ski Conservation Fund: Enables visitors to donate one to two dollars when purchasing ski passes or staying in resort lodges. Since 2006, the fund has invested over \$3 million USD on the White River National Forest to support trail and recreation infrastructure, enhance wildlife habitat, restore streams and wetlands, protect native wildlife, and reduce noxious weeds.
- Habitat Mitigation Partnership: Contributed \$350,000 USD over four years to support projects related to lynx studies, education and habitat.
- Hayman Restoration Partnership: Along with many other businesses including power companies, private foundations, and Coca-Cola, contributed over \$2 million USD to restore National Forest land after the catastrophic 2002 Hayman Fire (discussed later in this report) as part of the National Forest Foundation's "Treasured Landscapes" partnership. The partnership planted over 56,000 trees, restored 355 acres of wetlands and riparian areas, restored four miles of stream channel, and managed nearly 80 miles of recreation trails and roads.

In an age of declining budgets – faced by both New Zealand and US resource agencies – a frequent jaded view of partnerships is that they can help backfill for reduced agency budgets. While agencies may be under-resourced, that is not the most compelling reason for partnerships. The reality is much more inspiring. Many who care about preserving natural resources, solving environmental problems, and restoring the world's biodiversity have realised that conservation must involve more people and occur across traditional property line boundaries. If society is going to mitigate environmental problems on developed and agricultural land, it must develop sustainable land use practices that *integrate* extractive resource use with conservation, rather than separately allocating land to *either* development or conservation. If we do not do so, future generations will experience only unsustainable islands of nature (i.e. National Parks) in a sea of modified land.<sup>9</sup>

*Protecting nature is a huge job, and we can't do it alone...that's why DOC has increased its focus to engaging, partnering, and supporting others to get involved and contribute to conservation. DOC staff are still specialists at mucking in and getting important work done; but we also need to be inspiring, educating and informing others about conservation issues, and finding ways to mobilise New Zealanders to get involved and support them to play their part.*

–DOC's Conservation Partnerships  
kete ("kit") for partnerships staff

*Successful partnerships with business show that DOC is responsive and can create alliances with the commercial sector, which is aligned with Government desire for public-private partnership. Our partnership helps enhance both the Air New Zealand and DOC brands across a wide range of audiences. More importantly, the credibility of our brand and our ability to communicate in a manner that is respected and accessible means that contributing to conservation feels more normalised, for both other commercial businesses and for individuals.*

–James Gibson, Air New Zealand

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<sup>9</sup> Moller *et al.* (2008)

There is also a variety of reasons that the private sector chooses to partner with DOC or other resource agencies, such as corporate responsibility, competitiveness, and legitimisation. A brief discussion of these motivators from global sustainability research is included in the next chapter of this report. In my conclusions, I incorporate these general findings from scientific literature with the lessons learned from my case studies and interviews to give DOC and New Zealand primary industry specific insights into why, and how, engaging in a partnership could be mutually beneficial.

### **Why focus on primary industry?**

This report focuses on primary industry – dairy, meat, wool, forestry, fruit and wine – for several reasons. First, DOC already has a reasonably strong existing partnership programme with the recreation and tourism industry, but is only just beginning to partner with the primary sector. Second, primary industry is the base of the New Zealand economy and constitutes more than half of exported goods.<sup>10</sup>

There is also tension between DOC and primary industry. Historically, there is still resentment from some in the primary sector that DOC has “locked-up” or wasted natural resources. In addition, DOC – in its regulatory role – is sometimes in an adversarial role with primary industry. This tension is perhaps inevitable because while DOC manages approximately one-third of the country’s land area for conservation, primary production accounts for the remaining majority of the country’s land area and can cause significant effects on the environment. It is possible this tension will increase in coming years because New Zealand’s Government is working to double the value of primary industry exports by 2025 as part of the Business Growth Agenda.<sup>11</sup>

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<sup>10</sup> *New Zealand Economic and Financial Overview 2015* (24 March 2015). Agriculture, forestry and fishing accounts for nearly 6% of Gross Domestic Product (GDP).

<sup>11</sup> *The Export Goal* (5 March 2015). The Government’s Business Growth Agenda calls for increasing exports as a percentage of Gross Domestic Product from 30% to 40% by 2025, which would correspond to doubling the value of primary industry exports from \$32 billion in June 2012 to over \$64 billion by 2025.

## 2 BACKGROUND

### New Zealand Land Use and Economy

There are three main land uses in New Zealand: production, conservation, and urban development. New Zealand is home to approximately 4.5 million people, about 73 per cent of whom live in urban areas. Over one-third of land is legally protected for conservation purposes, with the remaining majority used for primary production (agriculture, planted production forestry, and horticulture).<sup>12</sup>

### Clean and Green

The natural world is a core part of New Zealand's identity, and the nation has an excellent reputation internationally and banks on its worldwide image as *clean and green*. This international reputation has a significant export value and is a key driver of the value of goods and services in the international market place. This image is exemplified in its *100% Pure New Zealand* international campaign by Tourism New Zealand, which has been running continuously since 1999. New Zealanders have a passion for and understanding of green growth issues,<sup>13</sup> and many New Zealanders believe that conservation is at the heart of what it means to be a New Zealander.<sup>14</sup>

### Primary Industry

Primary production is the base of the New Zealand economy and comprises more than half of exported goods. The industries included in this report are agriculture (\$26.7 billion in sales) and forestry (\$5.1 billion in sales). Within agricultural products, dairy alone comprises more than half of total sales, followed by sheep, beef, and horticulture (Table 1).

**Table 1:** Sales of principal categories of primary products in New Zealand, 2014<sup>15</sup>

Products	2014 Sales (million \$)
Agricultural Products	
Dairy	14,637
Sheepmeat	2,518
Cattle	2,209
Fruit (primarily kiwifruit, wine, apples and pears)	2,030
Vegetables	1,027
Sales of live animals	895
Crops and seeds	703
Wool	580
Other (non-farm income, other horticulture, services, deer, poultry/eggs, pigs)	2,100
Forestry	5,100

<sup>12</sup> *New Zealand Economic and Financial Overview 2015* (24 March 2015)

<sup>13</sup> *Greening New Zealand's Growth* (2011)

<sup>14</sup> Nielsen Company (2014)

<sup>15</sup> *New Zealand Economic and Financial Overview 2015* (24 March 2015)

Dairy has grown to be the dominant primary industry and 95 per cent of dairy products are exported. In fact, three to four per cent of all the world's dairy products come from New Zealand,<sup>16</sup> which is a rather remarkable number for a country that contains far less than 0.1 per cent of the world's population and land area.<sup>17</sup>

Tension has risen in recent years over the environmental impact of the growing dairy industry and concerns that it could undermine New Zealand's clean and green image.<sup>18</sup> Dairying can cause effects such as pollution of surface and groundwater, destruction of wetland and lowland native forest for farm development, indirect damage to freshwater and estuarine habitat through contamination and nutrient pollution of surface and groundwater, loss of native biodiversity (through damage or destruction of native habitat), soil erosion, soil contamination, and damage to soil structure, and discharge of greenhouse gases.<sup>19</sup>

The dairy industry has made efforts to reduce environmental impact with actions such as fencing off streams, rivers, and significant wetlands, encouraging appropriate disposal of effluent, and management of nutrients applied to farms soils. However, despite these efforts, water quality continues to decline in many areas used for dairying and intensive farm production. Compounding the issue is that even if these improvements are effective, they are often offset by intensification of production, or the conversion of lower intensity land uses such as sheep and beef farming or forestry to higher intensity uses such as dairying, cropping, and horticulture.<sup>20</sup>

In very general terms, other primary industries, such as sheep, beef, and horticulture, can cause similar problems with water quality and quantity and native species habitat. Forestry is generally seen as a less impactful land use because it stabilizes soil and can absorb greenhouse gases, but even that industry can cause environmental impacts, such as post-harvest erosion or wilding pine invasions.

The tensions between primary industry and conservation are likely to intensify as the central government pushes to double the value of exports by 2025 (Figure 1), especially if that goal is met by doubling primary production rather than diversifying into higher-value products.

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<sup>16</sup> Stringleman and Scrimgeour (2012)

<sup>17</sup> World Bank (2015)

<sup>18</sup> Stewart (2012)

<sup>19</sup> Mairi and Morad (2007)

<sup>20</sup> Mairi and Morad (2007)





**Figure 1.** Sharon Gay Murdock cartoon published in the *Dominion Post*, *The Press*, *Timaru Herald* and *Waikato Times* on 21 March 2015.

## Department of Conservation

DOC was formed in 1987 by the Conservation Act and is the central government agency charged with promoting conservation of the natural and historic heritage of New Zealand on behalf of, and for the benefit of, present and future New Zealanders. DOC's responsibilities include, but are not limited to:

- In coordination with others, maintaining as much as possible, the integrity of New Zealand's indigenous ecosystems
- Acting as guardian to some of New Zealand's cultural and historic heritage
- Contributing to the recreation opportunities of all New Zealanders
- Supporting tourism
- Giving effect to the principles of the Treaty of Waitangi (in accordance with section 4 of the Conservation Act of 1987)
- Protection of marine mammals
- Preservation of native freshwater fisheries and habitat
- Conserving protected native wildlife wherever it occurs
- Serving as the lead advisor on the Convention on Biological Diversity and other international agreements
- Advocating generally for the protection of natural and historic resources, providing technical expertise, and promoting the economic, environmental and social benefits of conservation.

In addition, DOC's capital assets include:

- 8.5 million hectares of land including 14 national parks, generally referred to as "conservation lands," which is nearly a third of the country
- 38 marine reserves (1.7 million hectares)
- Six marine mammal sanctuaries (2.4 million hectares)
- 24 visitor centres, 14,000 km of track, and 976 huts<sup>21</sup>

To meet these responsibilities, the agency has roughly 1,800 staff and an annual budget of approximately \$385 million. This is a tremendous amount of work for 1,800 employees, and many see the agency as under-resourced. For example, DOC is only attempting to manage about 300 of more than 2,000 threatened species in New Zealand due to budgetary constraints.

<sup>21</sup> *New Zealand Department of Conservation Annual Report (2014)*

While DOC may be low in government budgetary support, it enjoys a remarkable amount of support from the general public. In fact, it is one of the most appreciated public agencies in New Zealand, and a large majority (74 per cent) of New Zealanders have a favourable view because they believe the agency is doing a good job, provides good facilities and services, and/or is looking after the nation's parks, sites, and tracks.<sup>22</sup> In 2013, when the Government proposed significant budget cuts for DOC, the public turned out for a "Love DOC Day" to push back on the cuts.<sup>23</sup> The *2015 Most Influential Brands in New Zealand* study ranked DOC eighth of the most influential brands in New Zealand based on high scores for environmental and social responsibility, actively caring and supporting New Zealand communities, and as a trusted brand in the public domain.<sup>24</sup> And finally, in 2015 DOC was selected among the nation's 150 largest companies as the winner of the Randstad Award, which means it is perceived by the general public to have an attractive image.<sup>25</sup>

In an effort to increase effectiveness, DOC has been through a series of significant restructures in recent years. The most recent one is currently underway and results will be announced later in 2015.

### **Biodiversity and Pest Control**

One of the top conservation issues for DOC (which is often a surprise for US colleagues) is actively managing predator pests such as rats, stoats, and possums in order to preserve the nation's biodiversity. Around 90 per cent of New Zealand's birds and insects are found nowhere else on earth, yet the nation has one of the highest proportions of threatened species in the world.

With the exception of bats, New Zealand's biodiversity evolved with no land mammals. Therefore, these unique species are extremely vulnerable to predation by introduced mammals such as brush-tail possums ("possums"), stoats, and rats. New Zealand was one of the last places on earth to be settled by humans, yet in the past 800 years, humans and their accompanying pests have made extinct:

- 32 per cent of indigenous land and freshwater birds
- 18 per cent of seabirds
- Three of seven frogs
- At least 12 invertebrates such as snails and insects
- One fish, one bat, and perhaps three reptiles
- At least 11 plants<sup>26</sup>

Possums, stoats, and rats are widespread throughout New Zealand and are the biggest and most immediate risk to survival of many native birds.<sup>27</sup> These pests compete with native species for food and habitat and eat the adults, eggs, and chicks of many rare native birds, reptiles, and invertebrates. The problem is so severe that roughly 90 per

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<sup>22</sup> Nielsen Company (2014)

<sup>23</sup> Matthews (2013)

<sup>24</sup> Tao (2015)

<sup>25</sup> Randstad (2015)

<sup>26</sup> *The New Zealand Biodiversity Strategy* (2000)

<sup>27</sup> Innes *et al.* (2010)

cent of the iconic kiwi that are hatched in the wild will die before they can reproduce, unless predator control is in place.<sup>28</sup> Brush-tail possums (“possums,” native to Australia and quite different from the North America opossum) are also the main carrier of bovine tuberculosis (“TB”), a highly infectious disease for farmed cattle and deer that poses a significant threat to one of the country’s top industries.

Besides the impact on native biodiversity, introduced pests also have real economic costs for New Zealand. The “defensive cost” for the public sector, including quarantine and border control, surveillance, research, pest control, and eradication, is estimated at \$836 million per year. The “output losses” for the agriculture, horticulture, forestry, and marine sectors is estimated at \$1.3 billion per year. Together, these economic costs measure at 1.86 per cent of GDP.<sup>29</sup>

All of this means that New Zealand and DOC have one of the most sophisticated pest control programmes in the world. The three predominant pest control methods discussed later in this report include:<sup>30</sup>

Trapping: There are many different designs, including kill traps, leg-hold traps, and cage traps. The traps are placed in the field and must be checked regularly based on their design.

Poison: While DOC has 11 poisons approved for use against mammalian pests, the one that is most used is 1080 (sodium fluoroacetate). 1080 can be incorporated into baits targeted to specific pests, and is mostly used in ground operations (placed in bait stations or applied directly to the ground) to control possums and bovine TB. It can also be applied aerially over large remote areas, but this can be controversial.<sup>31</sup>

Predator-proof fencing: New Zealand has revolutionised building specialised fenced sanctuaries to exclude pest mammals, such as the Zealandia Sanctuary in Wellington. These fences can be very effective at protecting native species inside the fence, but they are expensive to build and maintain and require the removal of pests within the fenced area by trapping or poisoning.

In 2012, the late Professor Sir Paul Callaghan – a respected New Zealand scientist, New Zealander of the Year, and thought-leader – gave his final public lecture on this topic: “What do we have that marks us out as unique in the world?” He compared New Zealand’s unique fauna to the likes of England’s Stonehenge and China’s Great Wall and went on to suggest his “mad” idea – which he called the New Zealand equivalent of the Apollo space programme:

*Let’s get rid of the lot. Let’s get rid of all the damn mustelids, all the rats, all the possums, from the mainland islands of New Zealand. We start with Rakiura [Stewart Island]. And we work our way up. We can do this. We know how to do it – A predator-free New Zealand.*

–Sir Paul Callaghan, 13 February 2012

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<sup>28</sup> Animal Pests (n.d.)

<sup>29</sup> Economic Costs of Pests to New Zealand (2008)

<sup>30</sup> *Evaluating the use of 1080: Predators, poisons, and silent forests* (2011)

<sup>31</sup> Ibid.

## **Barriers and Motivations for Businesses to Adopt Sustainability Practices, and Applications to New Zealand**

There is a significant and growing body of international research about the drivers for businesses to adopt sustainability practices, such as water conservation, waste stream management, or reduction in use of toxic chemicals. A public-private partnership with DOC is a kind of sustainability practice, thus some of these general findings from the academic literature are useful for context and to inform strategy.

In general, there are many reasons that companies may want to adopt environmental practices, including:

- Complying with regulation and legislation<sup>32</sup>
- Competitive advantage and market success (achieving profitability by reducing cost and enhancing efficiencies or by gaining rewards from consumers)<sup>33</sup>
- Legitimation, approval, or acceptability, including reputation and the desire to be perceived as satisfying government regulations, complying with environmental norms and satisfying external stakeholders<sup>34</sup>
- Company internal-improvement – optimising internal processes and related cost savings<sup>35</sup>

Many of these findings apply to large and international corporations, so it is important to look at the barriers typically cited by small and medium-sized businesses when considering environmental practices. Collins *et al.* completed a comprehensive literature review to apply to the small- and medium-sized businesses that are typical of New Zealand, and identified the following barriers:<sup>36</sup>

- Perception that they have little individual impact on the environment, especially in comparison to larger corporations
- Lack of capability, expertise, and understanding of strategies to address environmental issues
- Concern over the cost of these measures.

This study and another that specifically analysed the New Zealand wine industry found that the key factors to overcome these barriers for small and medium-sized businesses in New Zealand were the beliefs and values of senior management.<sup>37</sup> The personal preferences of shareholders also play a role, and an important factor for the wine industry was employees' personal satisfaction, i.e. having a pleasant place of employment. This reflects the idea that the people who manage corporations – and to a lesser extent the people who work for them – choose to represent their personal values. Individuals' personal values are fundamentally important drivers of proactive environmental behaviour.

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<sup>32</sup> Lozano (2015)

<sup>33</sup> Gabzdylova *et al.* (2009), Bansal and Roth (2005), Windolph *et al.* (2014)

<sup>34</sup> Windolph *et al.* (2014), Suchman (1995), Lozano (2015)

<sup>35</sup> Windolph *et al.* (2014), Shrivastava and Hart (1995)

<sup>36</sup> Collins *et al.* (2007)

<sup>37</sup> Collins *et al.* (2007), Lozano (2015), and Gabzdylova *et al.* (2009)

### **3 METHODOLOGY**

The primary goal of this report was to tell the story of existing public-private sector partnerships and perceptions between DOC and primary industry, including lessons learned, opportunities for the future, and comparison with a relevant example in the US. A secondary goal was to look at whether and how the concepts of natural capital and ecosystem services could apply to decision-making regarding public-private sector partnerships.

In order to meet these goals, I proceeded with a two-part research plan: (1) case studies of existing public-private sector partnerships; and (2) semi-structured interviews with New Zealand business and opinion leaders. In total, I met with over 75 individuals during the course of my research to gather information and background.

The projects selected for case studies were first suggested by DOC staff, and informed by document reviews, interviews with involved individuals over the phone and in person, and field visits when possible. The case studies highlight the conservation and private-sector benefits obtained by both partners, as well as the motivations of the private sector to get involved.

The 32 business and opinion leaders selected for semi-structured interviews were recommended by DOC, business colleagues, or identified through research. While I was unable to arrange a time with all the busy individuals I approached, the sample I did connect with were generally interested in the issue and therefore had useful insights to share. However, since they were somewhat self-selected based on interest, their opinions may not be broadly applicable across all of their peers.

The interviews were semi-structured and followed the time constraints and conversation flow of the speaker, but the general questions included:

1. Please begin by telling me about your organisation and your role?
2. What is the future of your industry, and what are your major risks?
3. Does DOC have an effect at all – or could it – on your business?
4. What is your business's relationship with DOC?
5. Are you familiar with partnerships DOC is developing with outside entities, particularly with business?
6. Does your business/industry donate/sponsor charities in your community? What motivates you to support this entity?
7. What value can DOC provide to your business?
8. How would you suggest that DOC approach you as a partner or with an idea for a new project?
9. Who else should I talk to?

The interviews provided many valuable insights. I incorporated the themes from the interviews with the lessons learned from the case studies to inform the conclusions and recommendations at the end of this report.

## 4 CASE STUDIES OF CURRENT PUBLIC-PRIVATE SECTOR PARTNERSHIPS IN NEW ZEALAND

This chapter includes case studies of several existing public-private sector partnerships. Two stories are detailed and include accomplishments, governance structures, and lessons learned. Following these are four brief examples of other partnerships that provide useful examples and lessons, but were not advanced or developed enough for a detailed case study. The two detailed case studies include:

- **Poutiri Ao ō Tāne** – Returning native species to conservation land and surrounding production landscapes, *Hawke’s Bay region*
- **Project Aorangi** – Energising the community to eliminate pests and restore native birds while maintaining recreational hunting opportunities on conservation land and surrounding pastures, *South Wairarapa coast*

The brief examples of other case studies include:

- **Nelson Forests and Mount Richmond Forest Park:** Working together to address wilding pines, *South Marlborough region and the Richmond Range*
- **Ruamahunga Cut-Off and the Wairarapa Moana Wetlands Restoration Project:** Restoring wetlands on private pasture in a 50-50 partnership with farmers, *Lake Wairarapa and Lake Onoke and surrounding wetlands, Wairarapa plains*
- **Living Water Programme:** A partnership with Fonterra and DOC to improve five sensitive water catchments in dairying regions across the country
- **Marlborough New Zealand Falcon Conservation Programme (formerly Falcons for Grapes):** An unsuccessful attempt to partner with the winegrowing industry to restore rare falcons to vineyards, *Marlborough region*

**Poutiri Ao ō Tāne: Returning native species to conservation land and surrounding production landscapes, Hawke's Bay region**<sup>38</sup>



<i>Quick View</i>	
Area and Setting	8,800 ha in the Maungaharuru-Tutira catchment 60km north of Napier, centred on DOC's Boundary Stream Mainland Island (702 ha) and including surrounding commercial forest and pasturelands.
Timeframe	3-year programme began in 2011; contract extended in 2015
Goal	Return native species to the area on both DOC conservation lands and adjacent agricultural and plantation forestry landscapes
Partners	DOC (\$161,760) Hawke's Bay Regional Council (HBRC) (\$206,800) Aotearoa Foundation (\$927,600) Landcare Research (\$60,000) Iwi, environmental education and community organisations  <i>Private Sector</i> <ul style="list-style-type: none"> <li>• Sheep and beef farmers</li> <li>• Pan Pac Forest Products</li> </ul>
Conservation Benefits	<ul style="list-style-type: none"> <li>• Reintroduction of 4 bird species: Cook's petrel, mottled petrel, kākārīki, and kākā on DOC land</li> <li>• Habitat restoration on non-DOC land including fencing and restoration plantings</li> </ul>
Private Sector Benefits	<p><u>For farmers:</u> Developed cost-effective expanded predator control for mustelids (i.e. stoats and ferrets) that coordinates with existing possum control for bovine TB eradication and is easy for farmers to maintain (costs reduced from \$8-\$10/ha to \$2-\$3/ha per year). Early research indicates that a landscape-scale pest management programme that includes feral cat control could deliver tangible economic benefits to sheep farmers by reducing the incidence of toxoplasmosis.</p> <p><u>For Pan Pac:</u> Corporate citizenship; Strong relationship with agencies</p>
Extended benefits	The experience and knowledge gained from this partnership created the opportunity to scale-up predator control and ecological restoration on the new 26,000-ha Cape to City project, launched in April 2015.

<sup>38</sup> Case study drawn from a variety of sources, including: Cape To City 2015; Poutiri Ao ō Tāne Project Impact Report: 2014; Poutiri Ao ō Tāne Project Learning Exercise 2014 (Internal); Poutiri Ao ō Tāne Project report prepared for the Aotearoa Foundation (2014); and interviews with Melissa Brignall-Theyer, David Carlton, Rod Dickson, Brett Gilmore, Sarah Kafka, Campbell Leckie and Shayne Walker.

In 2010, the Aotearoa Foundation<sup>39</sup> approached DOC with an idea to invest significant dollars towards restoring native biodiversity that would connect the mountains to the sea in the Hawke’s Bay region. The Foundation was founded by the Robertson family, which is one of the three major landowners behind the nearby privately-owned and funded wildlife restoration project called Cape Sanctuary. DOC discussed the opportunity with other conservation partners and jointly designed a project that was part of a long-held regional vision for biodiversity that would include the mountains, sea, and native bush remnants. It took nearly a year to propose the project in a form that was finally accepted by the Aotearoa Foundation, and the Foundation granted DOC \$930,000 NZD over 3 years to be matched with in-kind contributions from DOC and the Hawke’s Bay Regional Council (HBRC).

The resulting project was Poutiri Ao ō Tāne, an 8,800 hectare project in the Maungaharuru-Tutira catchment that includes DOC’s Boundary Stream Mainland Island<sup>40</sup> as well as surrounding farmland and plantation forests. The purpose of Poutiri Ao ō Tāne is to show that large-scale conservation can occur in harmony with surrounding non-conservation lands including those in agriculture and production forestry. In particular, the goal of the project was to reintroduce native birds and design and apply large-scale predator control over both conservation lands and pastoral landscapes to determine if these techniques can boost native species and their use of the remaining native forest, such as Boundary Stream.

DOC was already controlling pests on Boundary Stream, and many surrounding lands had possum control led by the Hawke’s Bay Regional Council (HBRC). However, Poutiri Ao ō Tāne proposed to expand to landscape-scale pest control beyond possums to include top-level predators such as cats, stoats, ferrets, and rats. This expanded predator control is critical to support the survival of native species including birds, skinks, and invertebrates while providing a buffer to protect species reintroduced into Boundary Stream. The Poutiri Ao ō Tāne vision is that eventually native birds will “spill over” into surrounding areas.

*We see the beating wings of birds returning to the forests of New Zealand and vulnerable species flourishing in the midst of sustainable agricultural production.*

- Vision of Poutiri Ao ō Tāne

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<sup>39</sup> The Aotearoa Foundation is a division of the Robertson Foundation, which was founded in 1996 by Julian and Josie Robertson and their family. The Robertsons own property on Cape Kidnappers, which is a large peninsula in Hawke’s Bay. Much of Cape Kidnappers is a privately owned nature sanctuary that is also restoring native birds, but it is not part of the Poutiri Ao ō Tāne project area.

<sup>40</sup> Boundary Stream is one of five Mainland Islands managed by DOC. Mainland Island management is modeled after DOC’s successful predator pest eradication efforts on offshore islands, but are mainland sites where DOC is working to protect and restore native biodiversity through an intensive regime of options such as trapping, hunting, poisoning, and predator-proof fences which reduce predator pests to near-zero levels. (*Mainland islands* 2015)



## Administering the Partnership

The role and work of some partners shifted over time, but in general their roles included:

- DOC: Served as lead agency and led species reintroductions and predator pest control on DOC lands and adjacent Pan Pac-managed forestry lands;
- The Hawke's Bay Regional Council (HBRC): Led predator pest control on agricultural lands based on existing strong relationships with local farmers from their Possum Area Control Programme;
- Aotearoa Foundation: Funded species reintroductions and fencing and infrastructure;
- Landcare Research (a Crown Research Institute): Led critical research that enabled species reintroductions, especially the seabird relocation programme. Landcare Research also played a critical role in documenting the success of the enhanced predator pest control system;
- Iwi including Maungaharuru Tangitu Inc, Ngati Pahauwera, and Ngati Hineuru: Participated in some decision-making and supported species reintroductions and iwi community involvement.
- Local farmers: Participating farmers allowed predator pest control activities, researchers, and/or habitat restoration on their land, and it is expected that many of them will assume maintenance of pest traps in the next phase of the project;
- Pan Pac Forest Products: Allowed expanded predator control for stoats and ferrets on the plantation forest they manage adjacent to Boundary Stream. Pan Pac also contributes funding to DOC's Pan Pac Kiwi Crèche, which is a nearby predator-proof area for young kiwi and will play a role in other upcoming reintroductions, such as blue duck (whio).
- Local education and conservation groups: Support education efforts and provide volunteer assistance for projects.

Most partners were represented in a Strategic Steering Group administered by DOC. However, there was some confusion from the beginning on the actual role of the Strategic Steering Group. Several partners – especially iwi – had expected that the Group would make decisions about Poutiri Ao ō Tāne implementation while DOC expected it to be more of a tool for community-building and information-sharing.

The Strategic Steering Group met between three to five times per year and became largely a forum for information-sharing, especially since the representative sent from each partner changed frequently and new attendees had to start with background and basic updates.

There was some occasional discomfort between DOC and the Aotearoa Foundation which seems to be based on the different cultures of the two organisations. The Foundation is based in the US where it is not standard to grant private Foundation funds to government entities. Similarly, DOC had its own budgeting and task-setting processes and needed time to learn the Foundation's reporting requirements and accomplishment expectations. The final Poutiri Ao ō Tāne proposal included six workstreams: habitat restoration; species reintroductions; landscape-scale predator pest control; research; education; and community and stakeholder involvement. Most of the Foundation funds were allocated to species reintroduction and the infrastructure needed

to support it, while the other functions were to be done mostly in-kind by DOC or HBRC.

As the project advanced, species reintroductions and landscape-scale pest control advanced well. Unfortunately, other functions stalled, such as implementing a community engagement and revenue generation strategy. These efforts were shifted to be part of the larger vision that became the Cape to City Project launched in April 2015, and are addressed below in ‘lessons learned.’

## **Accomplishments**

### Direct conservation accomplishments

*Species reintroductions:* Perhaps the most dramatic and photogenic accomplishment is the reintroduction of kākā (brown parrots), kākārīki (yellow-crowned parakeets), Cook’s petrel (tītī) and mottled petrel (kōri) to Boundary Stream. Translocations are resource-intensive, but are critical for long-term conservation of threatened species. All of these birds are severely threatened and generally restricted to offshore islands and/or mainland islands protected by predator-proof fences. In fact, this is the first time anywhere in the world that mottled petrels have been translocated.



Two of six kākā reintroduced into the wild at Boundary Stream in February 2014. DOC constructed the kākā aviary, feeding stations, and predator-proof nest boxes in 2011, and the birds were transferred to the aviary from Wellington Zoo and Puhaka Mount Bruce in 2012. [photo credit Ruud Kleinpaste]

The species reintroductions are of particular importance to DOC and the local Māori, especially the Maungaharuru Tutira iwi because they are culturally linked to the massive flocks of seabirds that historically flew in from the sea to nest in these mountains. In fact, the name Maungaharuru translates to “roaring/rumbling mountain,” which refers to the historic daily flights of seabirds inland to nest and rest, which would fill the sky with wings and a roaring sound.

*This project is amazing. The translocation of those muttonbirds – those petrels – up there has our tribe absolutely beaming. We’re doing backflips over that stuff. When I can promote that we’ve had more than 100 muttonbirds translocated back to our mountains, everyone just says, wow, that’s amazing.*

*So we're really excited. Our aspirations are to reconnect with our resources... we want to learn more and re-establish our kaitiakitanga ("guardianship or custodianship").*

—Shayne Walker, Maungaharuru Tutira Inc, General Manager



Burrows under construction for the petrel translocation. The predator-proof fence was constructed in 2012, and in March 2013, DOC translocated 50 young Cook's petrel from Little Barrier Island. 48 of these birds successfully fledged (developed wing feathers enough to fly away). In 2014, DOC translocated 45 mottled petrel from Codfish Island. [photo credit: DOC]

*Landscape-scale Predator Pest Control:* The Poutiri Ao ō Tāne coalition has successfully controlled pests over 8,000 ha including DOC's Boundary Stream and surrounding production forests and agricultural lands. Research indicates that HBRC's control methods have already benefitted native skinks and invertebrates. Project partners expect that ongoing research will indicate that the predator control also benefits native birds and helps reduce incidences of predator pests reinvading Boundary Stream.<sup>41</sup> A truly transformational outcome is that the HBRC has now developed low-cost predator pest control methods for stoats, ferrets, and feral cats of \$2 to \$3 per hectare. This accomplishment is based on HBRC's successful Possum Area Control Programme (PACP) which began several years earlier. While possum control was driven by the need to control tuberculosis, PACP had the side-effect of reducing possums to low enough levels so that it became affordable to also control stoats, ferrets, and feral cats.

*Habitat restoration:* Eight supportive private landowners restored native habitat on a total of 124 hectares and erected 10,240 metres of fencing to protect native species from goats and livestock. In addition, volunteers planted at least 4,500 native plants as part of the community involvement strategy.

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<sup>41</sup> Jones *et al.* (2015)

Direct private sector benefits: Pan Pac is satisfied with their involvement even though they do not calculate a direct economic benefit because it was an opportunity to show their corporate responsibility and maintain strong personal relationships with natural resource agencies:

*It's all about maintaining our relationships because we are here for the long haul and want to be seen as good operators.*

—Brett Gilmore, Pan Pac Forest Products

Local beef farmers benefit from the continued success of keeping bovine TB away from their herds. However, an important future economic benefit for local sheep farmers has emerged from the research conducted as part of Poutiri. Although predator pest control is critical to maintain native birds, skinks, and invertebrates, emerging research indicates that if the landscape-scale techniques developed for Poutiri were also applied to feral cats, they could reduce the spread of toxoplasmosis to sheep herds and thus save farmers the larger cost of pre-emptive vaccinations.<sup>42</sup> The pest control technology piloted as part of Poutiri has reduced maintenance costs for possum, stoat, and ferret control from \$8 to \$10 per hectare to \$2 to \$3 per hectare per annum.

*In the last few years we've seen an unbelievable reduction in possum numbers and a huge increase in birds. I can now plant trees and be confident that they will survive because the possums aren't there anymore... Farmers don't have a lot of time to continually check bait stations and traps so using this technology is going to make a big difference for us... If toxoplasmosis spread by feral cats could be brought under control that would be a real economic benefit to farmers. Bringing clever science and clever technology together is a win-win for farmers who can enjoy more production and biodiversity.*

—Bruce Wills, Hawke's Bay farmer and former Federated Farmers of New Zealand President

Extended benefits: Perhaps the greatest indicator of success for Poutiri Ao ō Tāne is that it is being dramatically expanded over a five-year period. The next phase is known as Cape to City and was launched in Napier on 30 April 2015. Cape to City will build on Poutiri and focus on ultra low-cost, large-scale predator control across 26,000-ha of farmland between Hastings and Cape Kidnappers, and extends southwards to include Waimarama forest remnants at Kahuranaki. The goal of Cape to City is even more transformational and aims to achieve a predator-free Hawke's Bay, restore native species, engage people in urban environments, and add value for farm businesses: “native species thrive where we live, work, and play.” This project includes a similar suite of partners totalling a \$6 million investment, including \$2.3 million from the Aotearoa Foundation. This project has an enormous amount of energy behind it – as evidenced by the full-room crowd at the launch – and Poutiri Ao ō Tāne was the stepping stone that gave the partners the confidence to expand.

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<sup>42</sup> Tompkins (2014)

## Lessons Learned

Research and monitoring is critical: The partnership with Landcare and HBRC to monitor the results of pest control helped refine methodology and show results such as the connection to toxoplasmosis and increase in skink and invertebrate numbers. This kind of research and monitoring should be continued and shared widely in a format accessible by other partners, academics, and the general public so as to build recognition and support for the project.

Governance was a limiting factor: Confusion over joint governance led to resentment and eventual disengagement by some stakeholders. For a true collaborative effort, some form of steering committee should have had some decision-making and implementation authority. However, Poutiri's Strategic Steering Group effectively served as an information-sharing and public relations forum. The perception is that DOC was the major decision-maker for the Foundation funds. DOC can manage this issue by taking the time to set very clear expectations and governance structures early. For example, if the funder chooses to set specific milestones that cannot be changed, then all partners should be made aware. Similarly, expectations should be discussed, set, and agreed-upon early so that all partners are aware of the responsibilities and capacity required to participate in decision-making. DOC is aware that a governance and potentially a community/public relations group should have been established at the outset and these issues are being addressed in the new Cape to City project.

DOC capacity, staff turnover, internal reorganisations, and a lack of project management were limiting factors: The fact that the Boundary Stream team leader changed multiple times during the three-year project undermines the institutional knowledge, continuity and relationship-building that is a core component of a successful partnership. While this partnership is between agencies, it is the knowledge and relationships between people that make it work. In addition, DOC committed to the project with existing staff resources that struggled to manage their existing workload as well as these considerable new responsibilities. Strong project management techniques and transition planning could have compensated for some of these issues, but the lack of capacity and accountability is one of the reasons why key commitments such as community and stakeholder engagement were not implemented. DOC commissioned detailed plans from the Giblin Group for both revenue generation and community engagement, and the lack of implementation was a waste of resources and a risk to the long-term sustainability of the project.

Lack of early two-way communication was a limiting factor: The original proposal accepted by the Foundation had unrealistic commitments and timeframes because it did not include enough input from knowledgeable partners. For example, petrel translocations are complex and did not involve the people who knew the complexities of the site or account for the time it would take iwi to negotiate when Waitangi Treaty settlements were underway. These were both factors that led to a translocation that was two years "late" according to the original Aotearoa Foundation grant timeframe. In addition, DOC incorrectly communicated that maintenance of predator control operations would transfer to the local community in the short-term, even though the HBRC was the entity leading predator control operations and planning. The Poutiri project may also have benefitted from early conversations and work to understand the needs of neighbouring private landowners, which could have led to more expansive goals and buy-in from other property-owners. This failure to agree on reasonable

expectations at the beginning created later stress with the Foundation and could have jeopardised continued funding.

*Iwi engagement in species reintroductions is critical:* The relationship between DOC and the local iwi is exceptional. Poutiri successfully engaged them in the reintroduction at many stages from early negotiations to monitoring and construction of nesting boxes. This engagement broadens the purpose of the project and builds support, expertise, and manpower for this and other projects. DOC should keep iwi involved from the very beginning developmental stages of a project so that they do not feel that others are making decisions for them.

**Project Aorangi : Energising the community to eliminate pests and restore native birds while maintaining recreational hunting on conservation land and surrounding pastures, *South Wairarapa coast*<sup>43</sup>**



<i>Quick View</i>	
Area and Setting	30,000 ha on the South Wairarapa coast and Aorangi mountain range, including Cape Palliser, DOC’s 19,000 ha Aorangi Forest Park, 2,000 ha owned by Ngāti Hinewaka, and about 20 surrounding sheep and beef farms.
Timeframe	Small-scale community efforts have been in place for some time, but the Aorangi Project began in earnest with the creation of the Aorangi Restoration Trust in 2011 and kick-off of a 10-year large-scale predator pest control strategy in August 2014.
Goal	To reverse the degradation of local indigenous species through the eradication of introduced pests and predators from the forest and surrounding farmland. The long-term vision is to enable the reintroduction of locally extinct species and to ultimately reintroduce species such as kiwi, whio (blue duck), weka and other forest birds which once populated the Aorangi forest.
Partners	Aorangi Restoration Trust, Ngāti Hinewaka, DOC, Aorangi Recreational Hunters, DOC, TBfree NZ (OSPRI); Greater Wellington Regional Council.  <i>Private Sector</i> <ul style="list-style-type: none"> <li>• Sheep and beef farmers</li> </ul>
Conservation Benefits	<ul style="list-style-type: none"> <li>• Large-scale predator control for possums, rats, and stoats implemented on 30,000 ha</li> </ul>
Private Sector Benefits	<u>For farmers:</u> <ul style="list-style-type: none"> <li>• Cattle and deer herds free from tuberculosis.</li> <li>• Being a good neighbour and supporting the larger goal of ecological restoration in the area.</li> </ul>
Extended benefits	With support from DOC and others, TBfree New Zealand designed a 10-year aerial 1080 poisoning operation that delivered a “triple hit” on possums, stoats, and rats for nearly the same cost as standard TB possum control. This methodology can now be deployed elsewhere.

<sup>43</sup> Case study drawn from a variety of sources, including: Project Aorangi (2015), Hartley (2014), Project Aorangi – Haumanu kia Haumoko (2014), and interviews with Chris Lester, Paul Cutfield, and Clive Paton.



The major kick-start for Project Aorangi occurred in 2014 when TBfree New Zealand began a ten-year effort to control possums, stoats, and rats across the 30,000 ha area with a targeted 1080 aerial pest control programme. However, this major action was only possible because of many previous years of commitment, leadership, and community-building.

The Aorangis are the remote and rugged southern tip of the North Island, and have a direct line to the Antarctic. The rocky coastline supports a breeding colony of fur seals, and extends to include lowland forest, highland forest, and rivers and related habitat. Project Aorangi is centred on DOC's 19,000 ha Aorangi Forest Park, which is popular with red deer hunters and is one of eight Recreational Hunting Areas established on conservation land.<sup>44</sup> In addition to hunting opportunities, locals promote the Forest Park's great tramping and mountain biking opportunities, which seem under-utilised considering that the region is only two hours from the capital city of Wellington. The Forest Park is mostly surrounded by large sheep and beef farms and about 2,000 ha of land owned by Ngāti Hinewaka.

The community first began to come together several years ago when hunters and conservationists who shared a love of the area began to talk with TBfree New Zealand, iwi, DOC, the Greater Wellington Regional Council, and other community groups for common purpose. A key step occurred when neighbouring landowner and self-proclaimed "mad tree-planter" Clive Paton started talking to DOC about the condition of the Forest Park. Clive is a former farmer who shifted to winegrowing and now owns the award-winning Ata Rangi vineyard.

*I realised that no one is doing anything here. DOC is in an overseeing role but not doing anything for the future. I decided that I needed to look after the place.*

- Clive Paton, chair of the Aorangi Restoration Trust

At around the same time, TBfree New Zealand was considering an aerial 1080 poisoning operation to target possums as part of a plan to eradicate bovine TB from 2.5 million-ha of the country. TB was still viable in infected wild animals in the Aorangis, and the most recent aerial 1080 operation had been completed in 2009. Aerial 1080 poisoning will kill deer incidentally, is controversial for a variety of reasons, and is opposed nationally by the New Zealand Deerstalkers' Association. However, TBfree New Zealand (then known as the Animal Health Board) had successfully tested deer-repellent baits in a 2005 aerial drop and used it again in the 2009 drop with the support of local hunters. Neighbour Paul Cutfield was integral in organising hunters to support the testing of deer-repellent bait trials in Recreational Hunting Areas across the country in 2005:

*We tested the integrity of deer repellent on 1080 baits in Aug 2006, 2009 and again in Aug 2014. There were no significant deer losses found... win-win-win. As a consequence local deer hunters have by and large, withdrawn their objection to aerial 1080 operations with deer repellent. The hunters'*

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<sup>44</sup> DOC manages about 178,000 ha nationwide as eight Recreational Hunting Areas that prohibit commercial hunting. In New Zealand, commercial hunting refers to the culling of deer, pigs, and goats – including helicopter culling – to protect native plants and animals. New Zealand has no game seasons, licences, or bag limits for commercial or recreational hunters, but commercial hunters are banned from the eight designated Recreational Hunting Areas and hunters are required to have a permit to hunt on DOC land. (Fraser 2000)



*antagonism about aerial 1080 has changed into a constructive and collaborative one about wildlife management and biodiversity enhancement*

- Paul Cutfield, board of Aorangi Restoration Trust

The win-win-win was that adding deer repellent left 1080 effective for possums, the deer remained for hunters, and DOC and conservationists saw an increase in native birds because of reduced possums and other pests.

In 2011, Clive Paton and other South Wairarapa residents, business people, hunters, DOC and the Greater Wellington Regional Council (GWRC) came together to launch the Aorangi Restoration Trust. Leaders designed the Trust to be the community-led organisation that could coordinate restoration in the region. Before the Trust, many local landowners had been working at their own cost to enhance the bush, birds, and native plants on their own properties that neighboured the Forest Park. However, the Trust created a nexus for volunteers and agencies to gather for common purpose and work across the boundaries of public and private land. The Trust is now viewed as the local implementers and the board includes the active agencies (DOC, the Greater Wellington Regional Council, TBfree New Zealand) as well as iwi, Forest and Bird, and local leaders such as Clive Paton and Paul Cutfield.

The Trust began to organise volunteers and neighbouring landowners for a variety of projects, beginning with “Project Penguin” which supports the remaining population of little blue penguins by setting and monitoring traplines for ferrets, stoats, and feral cats and providing nesting boxes. The nesting boxes were a fun volunteer project that involved the local Lions Club and Kahutara School to cut assemble, decorate, and place the boxes. Trust volunteers are also monitoring traplines along the perimeter of the project area.



Students from Kahutara School assembling and getting ready to paint nesting boxes for little blue penguins as part of “Project Penguin.” The boxes were pre-cut by the Lions Club. [photo credit: Aorangi Restoration Trust]

Working in parallel to the Trust is the Project Aorangi Steering Committee. Through the expertise of the Steering Committee, TBfree New Zealand implemented the first year of a ten-year programme of aerial 1080 drops in August 2014. The 1080 operation

included the Forest Park as well as 10,000-ha of surrounding private lands that were included because of the Trust's successful efforts to engage neighbours. The agency expertise and community support led TBfree New Zealand to carefully design the 1080 operation to go beyond standard possum control and include deer repellent and targeted design to provide a "triple hit" on pests to reduce the numbers of possums, stoats, and rats. This step was critical to support the biodiversity of the area and came at very little additional cost.

Researchers from Victoria University of Wellington are monitoring the success of the project, but early reports indicate that predator numbers have been knocked back and Project partners are now eager to begin to reintroduce iconic species including kākā (brown parrots), weka (woodhen), and kiwi. DOC staff have begun the process of investigating the operational viability of translocating these species, but organisers hope that at least some translocations could begin in 12 to 18 months.

### **Administering the Project**

Project Aorangi is organised under a 2014 – 2017 Strategy and Action Plan that is signed by the six members of the Steering Committee and includes a vision, goals, and roles of each partner.

*Project Aorangi—Haumanu kia Haumako restores the mauri of the Aorangi Forest Park from the mountains to the sea, creating a world class ecological and recreational park in the lower North Island that contributes to the economic, social and cultural wellbeing of the Wairarapa and the wider Wellington area.*

- Vision of Project Aorangi

The associated goals are detailed under the following headings:

Goal 1 – Ecological: To restore the mauri ("vital essence") of the Aorangi area by restoring its natural ecosystems and the plants and animals that live there;

Goal 2 – Social and Cultural: To make the restoration and management of the Aorangi area the concern of every person in South Wairarapa and the wider Wellington region;

Goal 3 – Recreational and Economic: To increase the contribution that Aorangi Forest Park makes to the economic prosperity of Wairarapa by further developing its recreational and natural assets.

The steering committee comprises six groups with the following priorities and activities:

- Aorangi Restoration Trust: Organising like-minded people, mostly volunteers, from a diversity of backgrounds who support the ecological health of the area's native forests, wetlands, reverting pastoral land and coast;
- Ngāti Hinewaka: Restoring the ecological health of their 2,000 hectares and recording and preserving wāhi tapu (Māori sacred sites) and cultural sites in the region;
- DOC: Managing the Aorangi Forest Park in collaboration with stakeholders;
- Aorangi Recreational Hunters: Maintaining and improving the world class freedom hunting experience in the Aorangi Forest Park while collaborating on an outstanding ecological restoration project that also demonstrates a working

model of cost-efficient multi-species pest control (aerial 1080 with deer repellent);

- TBfree New Zealand/OSPRI: Controlling TB-infected wild animals, namely possums, in the Aorangi area as part of the National Bovine TB Pest Management Plan, which seeks to eradicate bovine TB from New Zealand.
- Greater Wellington Regional Council: Implementing statutory responsibilities for environmental management of private land including enhancing and protecting regional biodiversity.

Other notable partners include:

- Local farmers: All of the approximately 20 neighbouring sheep and beef farmers are allowing aerial 1080 and associated trapping on their land, and a few are assisting in trapline maintenance.
- Researchers from Victoria University: Monitoring predator and bird activity in the Forest Park and surrounding farms in 2014 to determine the population-level effect of the 1080 operation and the related response of native birds and invertebrates.

The Steering Committee has met approximately two to three times each year, but will begin meeting quarterly in 2015. Steering Committee meetings serve to keep partners updated and to share technical expertise such as that which led to the eventual design and implementation of the customised “triple hit” aerial 1080 operation.

The Aorangi Restoration Trust does much of its work through informal relationships in the community on a face-to-face basis. Since the Trust relies on volunteer leadership, it meets when needed but often makes an effort to invite experts to speak informally and educate the community about an area of interest such as local archaeology or river ecology. The meetings are generally well-received by those attending.

## **Accomplishments**

Direct private sector benefits: The primary benefit to private landowners in the area will be the eventual eradication of TB, which is highly infectious and can cause significant financial damage to farmers if a herd becomes infected. However, it is also clear that a major motivator for farmers is being part of the bigger picture to restore the resources that make the area special.

*A lot of people have spent time hunting or fishing in the area. Some may participate just to keep an eye on things, but most are there because they care about the bigger picture. The average guy wants to see the Forest Park looked after, not just because of conservation but because if you take care of the hinterlands, you're also making things better downstream.*

–Clive Paton

*If you're a farmer, by nature of the business it's not just about the revenue. An integral part of pastoral farming is about caring for the land and your animals. As Kiwis, this is our land, our country, our birds, and we'd like more of them. Surrounding landowners just want to play their part. Twenty years ago it may have been different and we would just chop the bush down to have more sheep, but things have changed and we want to look out for what's left.*

–Paul Cutfield

Direct conservation accomplishments: Research and monitoring has just begun, but it is expected that the treatment of 30,000 ha and the buffer effects of surrounding trapping will significantly enhance the populations of native birds and invertebrates in the Forest Park. In addition, the Trust's work to involve the community – such as having local schoolchildren build penguin nesting boxes – fits DOC's goal of involving more people in conservation and instilling a conservation ethic in the next generation.

Extended benefits: TBfree New Zealand is highlighting Project Aorangi because it shows that for very little additional cost, it can make a significant contribution to biodiversity conservation over and above usual aerial 1080 operations. The typical aerial 1080 operation would primarily target possums. However, the Project Aorangi operation used bait and spread patterns that were more cost-effective without damaging pest control efficacy. As TBfree New Zealand gets closer to their goal of eradicating TB, these learnings will be critical so that their expertise and skill can be applied to new goals, such as supporting biodiversity.

## **Lessons Learned**

Community leadership was critical, but communities still need professional DOC support and outside funding: It is clear that community collaboration accomplished significantly more than would have occurred otherwise. Leaders like Clive Paton took the initiative and built the community support that made this project successful. DOC's decision to act in response to the community in a support role helped build its connection with the community and subsequent support. DOC's support role was appropriate, but the community will likely need additional support as the project expands. As successful as the Trust has been, it is highly dependent on the time, energy, and passion of a few key individuals and should have a transition plan. Several individuals remarked that the Project would benefit from a dedicated DOC project manager and people with management and planning skills. Another frequent comment was that DOC seems to expect project funding to "materialise" from local communities. However, the smaller number of people in rural communities are also tapped for donations to other local causes such as schools and medical facilities. Transition and financial planning will be critical to sustain community-driven partnerships over the long-term.

Setting mutual goals at the beginning is critical: The founding vision and goals provided a critical basis for all subsequent work. Especially with a diverse coalition, it was important to have a signed document that placed equal value on elements that could be controversial but are important to different parties such as iwi values, maintaining red deer, and the use of aerial 1080. However, the founding document did lack measurable goals and standard project management tools are not in place. Goals and a project management framework should be revisited as the project moves forward.

Pragmatism, creative thinking, and flexibility are critical: Deer are an introduced species and conservation purists may have balked at working with influential leaders like Paul Cutfield and Aorangi Recreational Hunters. However, DOC staff showed their willingness to be pragmatic and thus the deerstalkers became a critical voice of support and energy for the entire project. While this non-traditional support strengthens the project, it could eventually be a risk if the deerstalkers oppose possible future deer culling to maintain native biodiversity.

*DOC staff turnover and capacity is a limiting factor:* These kinds of partnerships are dependent on person-to-person relationships, and it is a challenge when DOC staff shift and/or additional capacity is needed. The community has asked for DOC to play more of an active management role, but DOC has not been able to accommodate the request due to internal capacity issues. Several partners noted that they would prefer to have the consistency and continuity of one person at DOC.

*Partnerships can get more accomplished, but there will be a culture clash and DOC should be more responsive when appropriate:* This project was led by people who self-describe themselves as a “bunch of independent, self-made rugged men who don’t delegate well and are used to running their own show.” While effective in the context of this project, it is very different from DOC’s deliberative and layered processes that are required for native bird translocations and other conservation actions. Local leaders express frustration that they had a great start with 2014’s 1080 poisoning, but now they have to wait for a complicated, expensive, and time-consuming bureaucracy to catch-up. There is also resentment and rumours that DOC is slow to respond because they are too focused on courting wealthy international donors elsewhere (“DOC doesn’t have time for the Kiwis anymore.”). It is unclear why these delays or misunderstandings have occurred, but it could be from unclear expectations, a lack of project management, a lack of capacity, or related to the ongoing restructuring. Regardless, these frustrations and rumours pose a risk to DOC’s reputation, and it is critical to have DOC staff available that can explain and facilitate the process as much as possible.

## **Brief Partnership Examples:**

### **Nelson Forests and Mount Richmond Forest Park:**

**Working together to address wilding pines, South Marlborough region and the Richmond Range<sup>45</sup>**



The 166,000 ha Mount Richmond Forest Park (“Forest Park”) is mostly intact beech forest, however 15 per cent of the park is grassland or open shrub and thus vulnerable and subjected to wilding pine invasion.<sup>46</sup> The source of the wildings is varied, and some of it originates from conifers planted in the past by the Crown within the Forest Park boundaries. 60 to 70 per cent of the Park is adjacent to commercial forest plantations.

DOC and Nelson Forests Limited (an investor-owned company based in Nelson) are working on an agreement to control existing wilding conifers and minimise the risk of future invasions within and around Mount Richmond Forest Park. The process is community-based and collaborative, and Nelson Forests is playing a leadership role and is expected to contribute financially even though they are under no requirement to do so. Nelson Forests is taking this action for “goodwill to control any continual spread of wilding trees onto conservation lands from Nelson Forest-managed land.” DOC is now seeking to expand this partnership to other forestry organisations to manage wilding pines park-wide. Some early trials have already begun to control *Pinus contorta* on high-priority land. While it is too early to assess the results of this partnership, it has a lesson to share about the value of long-term face-to-face relationships and pragmatism.

Until recent years, the relationship between DOC and Nelson Forests was largely adversarial because of disputes over road maintenance costs and access issues. Many of these issues dated back to 1989 and the transfer of Crown land to private companies. However, a few years ago individuals from Nelson Forests and DOC began to meet, get to know one another, and share information. They developed a mutual understanding that eventually led to a ten-year Memorandum of Understanding (MOU) in 2011. The MOU is designed to provide “equal benefits to both parties,” clarifies the disputed issues, and sets agreements for regular meeting schedules, points-of-contact, and other issues such as public statements. The relationship, pragmatism, and willingness to work through issues in a mutually beneficial way is what led to the current work on wilding pine control, which is expected to have significant and long-lasting conservation benefits.

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<sup>45</sup> Information drawn from a variety of sources, including: Ledgard (2012), Memorandum of Understanding (2011), and interviews with Martin Rodd and Al Check.

<sup>46</sup> “Wilding pine” is the name given to non-native nuisance pine tree species when they spring up uninvited. Wilding pines compete for forest space with native trees and plants, but are especially a nuisance in areas where native forest does not occur, such as above the bushline, in mineral belts, and tussock grasslands. The most common wilding pine species in New Zealand are *Pinus radiata* (Monterey pine), *Pinus contorta* (lodgepole pine), and the Douglas fir (*Pseudotsuga sp.*). [Wilding pines (n.d.)]

**Ruamahanga Cut-Off and the Wairarapa Moana Wetlands Restoration Project: Restoring wetlands on private pasture in a 50-50 partnership with farmers, Lake Wairarapa and Lake Onoke and surrounding wetlands, Wairarapa plains**<sup>47</sup>



The Wairarapa Moana (“sea of glistening water”) was one of the first areas settled in New Zealand and has great cultural and economic importance to iwi dating back 800 years, particularly as an eel fishery. However, it is also an important farming region and in the 1960s the Ruamahanga River was diverted and now bypasses Lake Wairarapa as part of a flood protection project to enable 30,000 ha south of Martinborough to be farmed more intensively. Today, much of the Wairarapa plains is dedicated to sheep, beef, and dairy farming and Lake Wairarapa is one of New Zealand’s 10 most polluted water bodies due to high levels of nitrogen, phosphorus, and algae.

The Wairarapa Moana Wetlands Restoration Project (“Wetlands Project”) includes the southern catchment of the Ruamahanga River, Lakes Wairarapa and Onoke, and their surrounding wetlands; this area collectively includes half of all the remaining wetlands in the Wellington region and is the largest remaining wetland complex in the southern North Island. DOC manages several wetland fragments along Lake Wairarapa, and the local iwi are in Treaty of Waitangi settlement processes regarding ownership of the lake bed. The heart of the Wetlands Project is the effort to restore cultural, ecological, recreational, and natural character values to the lake and surrounding wetlands.

The Ruamahanga Cut-off project was an early success associated with the Wetlands Project. The Cut-off is a 3 km section of riverbed that was separated from the main river channel and is now a brackish section of riverbed running through farmland. Five years ago, a local farmer named Ed Handisides purchased the property as an addition to his existing family farm and was distressed that the water was largely stagnant, surrounded by old, dying exotic trees, and unfenced, with stock freely accessing the water. Ed approached DOC for help. In turn, DOC called the Greater Wellington Regional Council (“Regional Council”). Handisides, DOC, and the Regional Council agreed on an equal partnership to each contribute \$5,000 to fence the Handisides property and plant native species. The next year, neighbouring farmer Mike McCreary initiated a similar project with DOC and the Regional Council.

In 2012, the Ministry for the Environment energised the Wetlands Project with a \$1 million three-year grant from the Fresh Start for Fresh Water Clean-up Fund. The three-year grant is administered by the Regional Council and co-funded by landowners, and includes projects that focus on the quality of water leaving the farms and biodiversity, such as:

- Riparian plantings
- Improvement of effluent systems

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<sup>47</sup> Information drawn from a variety of sources, including: *Fresh Start for Fresh Water Clean-Up Fund Application Form* (2011), *Fresh Start for Fresh Water Clean-Up Fund Annual Report 2013/2014* (2014), Grant (2012), Pratt *et al.* (2015), and interviews with Ian Gunn and Chris Lester.

- Optimisation of water use and irrigation
- Pest and weed control
- Modification of drainage
- Surveys of fish and birds
- Removal of exotic fish
- Aerial application of herbicide on non-native plants.
- Construction of on-farm wetlands

Landowners have a significant cost-share for projects on their land which varies from 50 to 25 per cent based on the significance of the project for off-farm conservation. In 2014, the on-farm restoration work was estimated at \$1.1 million, with farmers contributing \$520,000. The Wetlands Project includes a Governance Group and Management Team, and partner organisations include the Regional Council, DOC, South Wairarapa District Council, Ngāti Kahungunu ki Wairarapa, Rangitāne o Wairarapa, plus additional support from Dairy NZ, NIWA (a Crown Research Institute) and other scientists and contractors. A key component of the Wetlands Project is outreach and technology transfer with “field days” that are designed to inform farmers and the community on technical issues related to the project. Field Day topics have included soils and water, irrigation management, and biodiversity in drains.

The motivations of participating farmers for this project included:

- Farmers need to be responsive to public concerns and keep their livestock out of streams if they are going to keep their social licence to operate
- A cleaned-up stream nice to look at
- Supporting a healthy riparian environment is good stewardship
- Farmers are anticipating limits from the National Policy Statement on Freshwater and are interested in ways they can reduce their effluent now, by methods of their choosing.



**Living Water Programme: A partnership with Fonterra and DOC to improve five sensitive water catchments in dairying regions across the country**<sup>48</sup>



Fonterra is a cooperative owned by its 10,500 member farmers and is one of the leading dairy exporters in the world. It is also New Zealand's largest company. In 2011, senior leadership at Fonterra and DOC began discussing a partnership that became a 10-year agreement, initiated on 7 March 2013, called *Living Water*. Living Water is a long-term commitment by Fonterra and DOC to protect and restore the health of five key waterways in the country, with the programme vision that "A sustainable dairy industry is part of healthy, functioning ecosystems that together enrich the lives of all New Zealanders." To meet this vision, Fonterra agreed to contribute \$20 million (average \$2 million per year) over ten years to achieve biodiversity outcomes on a catchment-wide scale that includes conservation actions on farms and on DOC conservation land. Both parties are also contributing significant staff resources. A key component of the programme is to work in partnership with local communities, dairy farmers, iwi, and other stakeholders.

The cultures of the two organisations are very different, and much of the initial 18-month start-up period has been spent learning to work with one another and to understand the opportunities for on-the-ground projects. The two partners worked to achieve a common programme vision, scope, and governance structure. An Operating Agreement signed at the beginning of the partnership defines guiding principles, and sets operational details such as protocols for decision-making, team meetings, financial responsibilities, contract management, document management, and external communication. Working groups include a Steering Committee, Technical Working Group, Communications Working Group, National Programme Management Team, and Regional Project teams.

The project has identified the following five Living Water catchments distributed across the country:

- Tīkapa Moana/Firth of Thames, Pūkorokoro/Miranda catchment
- Waikato Peat Lakes, Lakes Areare, Ruatuna and Rotomānuka, Waikato
- Kaipara Harbour, Hikurangi sub-catchment, Northland
- Te Waihora/Lake Ellesmere, Ararira/LII River catchment, Canterbury
- Awarua-Waituna, Waituna catchment, Southland.

The initial years of the project have been largely a development phase where the partners worked to begin long-term stakeholder engagement, particularly with Fonterra farmers and iwi. The partners realised that this engagement and a significant amount of

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<sup>48</sup> Information drawn from a variety of sources, including: *Our Progress: Making a Difference in Five Key Catchments Annual Report March 2013-June 2014*, *National DOC/Fonterra Living Water Operating Agreement*, and interviews with Sean Goddard, Richard Suggate, and Cerasela Stancu.

baseline monitoring and evaluation were necessary before on-the-ground projects could begin in earnest. However, in the first two years, the project initiated 16 start-up projects in the five catchments, including feasibility studies, bathymetry mapping, hydrology and habitat assessments, trials to enhance benefits from riparian plantings and fencing, a demonstration project for wetland construction, and trials of passive filters for nitrogen and phosphorus. One challenge of this phase has been a slow ramping-up of DOC capacity to handle the additional workload.

The focus for the next phase of Living Water is to develop and implement three-year strategic plans for each site and continue strong outreach to involve communities and other stakeholders. The teams are also beginning to evaluate the governance structures established at the beginning of the project to see if they need adjustment. A consistent concern is that DOC capacity may not yet be at an appropriate level, and the regular reorganising of the last few years has only exacerbated the problem. In addition, Fonterra is working on providing the requisite regional staff support and on getting buy-in from its farmer shareholders in the site catchments.

Living Waters has developed a list of lessons learned to share with other partnerships, which parallel many of the findings above. Their lessons learned include:

- Find a common purpose
- Be realistic and expect that disagreements will happen
- Create one team that meets regularly and gets to know one another as individuals
- Ensure clear documentation (i.e. articulate roles and responsibilities, programme purpose)
- Acknowledge complexities.

Even though it is still in the initial stages, this project has significant potential and could be a game-changer for DOC, Fonterra, and New Zealand. The scale of Fonterra's impact across the country is large, so the learnings they gain from this partnership can eventually be replicated to build a more sustainable dairying industry across the country. In addition, DOC is positioned to learn more about corporate culture and expectations, especially related to streamlining process and delegating staff, which could improve DOC's long-term operations and partnership opportunities.

**Marlborough New Zealand Falcon Conservation Programme (formerly Falcons for Grapes): An unsuccessful attempt to partner with the winegrowing industry to restore rare falcons to vineyards, Marlborough region<sup>49</sup>**



Falcons for Grapes was a promising idea that ended for valid reasons. Project proponents wanted to partner with winegrowers to re-establish the rare New Zealand falcon (karearea) into the highly modified environment of the Marlborough winegrowing region. Beginning in 2004, project proponents – in consultation with DOC – began releasing wild harvested and captive-reared falcon chicks on vineyards. The goal was to restore a self-sustaining, breeding population of New Zealand falcons to the region with the long-term support of the winegrowing industry. Vineyards spend significant dollars every year on netting and other technical tools to defend their vines from fruit-eating birds, and project proponents theorised that falcons could be an effective and affordable pest bird management tool for vineyards. Research undertaken as part of this project indicated that the falcons were effective for pest bird control, and that it was possible to establish breeding falcons on vineyards. However, the Falcons for Grapes project was ended for two reasons. First, monitoring discovered that released birds were being electrocuted at an alarming rate on nearby power transformers. Second, while individual vineyards were willing to host the birds, the winegrowing industry was largely unwilling to contribute financially to the project or to pay to modify their power systems and transformers.

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<sup>49</sup> Information drawn from a variety of sources, including: Kean (2009), Kross *et al.* (2011), Seaton *et al.* (2011), and interviews with Laurence Barea and Phil Bradfield.

## 5 AN EXAMPLE FROM THE UNITED STATES

For context, and to illustrate organisational details and clear links to ecosystem services, this chapter includes a detailed case study from the United States.

### **Forests to Faucets – Restoring forest and watershed health to protect the City and County of Denver’s municipal water supplies and infrastructure, Colorado, United States<sup>50</sup>**



<i>Quick View</i>	
Area and Setting	5 at-risk catchments in the foothills and central mountains west of Denver, Colorado. The land is predominantly National Forest used for recreation and interspersed with a patchwork of private lands containing permanent residences and access roads.
Timeframe	5-year agreement for 2009-2014; Discussions underway to expand into the next 5 years.
Goal	Proactively improve the health and resiliency of 15,500-ha of forests in areas critical for providing water to the City and County of Denver in 5 priority catchments: Upper South Platte River, South Platte River Headwaters, St. Vrain River, Colorado River Headwaters, and Blue River Watershed.
Partners	US Forest Service (\$21.7 million USD) <i>Private Sector</i> - Denver Water (\$16.5 million USD)
Conservation Benefits	18,600-ha of forest treated, including: <ul style="list-style-type: none"> <li>• 10,700 ha of hazardous fuels treatments;</li> <li>• 798,000 trees planted</li> <li>• 144 ha of wetlands and riparian areas restored</li> <li>• 80 miles of recreational trails and roads restored, constructed, or decommissioned;</li> <li>• 2,730 volunteers</li> </ul>
Private Sector Benefits	Reduced risk to Denver Water’s collection system
Extended Benefits	This partnership was the first of its kind and laid the groundwork for many similar agreements in recent years with additional municipal water providers, agencies, private foundations, non-for-profits, and businesses including Vail Resorts, Miller Coors Brewing Company, and the Coca-Cola Company.

<sup>50</sup> Case study drawn from a variety of sources, including: Collection Agreement (2014), Collection Agreement Financial Plan (2014), Denver Water Partnership (2015), Denver Water/US Forest Service Partnership 5-Year Operating plan (2011-2015)–Version 5 (2014), From Forests to Faucets: US Forest Service and Denver Water Watershed Management (2015), Graham (2003), Memorandum of Understanding 10-MU-11020000-046 (2010), Western Forestry Leadership Coalition (2010), and interview with Don Kennedy (9 May 2015).

The largest fire in Colorado state history began on 8 June 2002 and raged across more than 56,000-ha in 20 days. At the time, news reports on the “Hayman Fire” focused on the immediate devastation and costs – the death of one civilian and five firefighters, \$42 million USD in suppression costs, and \$136 million USD in direct costs including the destruction of 133 homes. However, the long-term costs became evident much later when subsequent rainstorms washed ash, sediment, and other debris into the Denver Board of Water Commissioners’ (“Denver Water”) infrastructure that supplies drinking water to 1.3 million people, or one-fourth of the state’s population.

Denver Water’s infrastructure consists of a complicated network of more than ten reservoirs and associated pipelines and tunnels that collect high-mountain snowmelt from streams stretching over 1 million ha and delivers it to the City of Denver and surrounding areas.<sup>51</sup> Post-fire flooding and debris flowed down to one of the key choke points in the network – the Strontia Springs Reservoir – and clogged it with 250,000 cubic yards of sediment, ash, and debris. Denver Water spent \$26 million USD over the next several years trying unsuccessfully to find engineering solutions to clean it out.

These unprecedented sediment flows were the result of extreme fire behaviour – a catastrophic fire – driven by a combination of weather, topography, and fuel conditions (i.e. dry and heavy burnable material such as trees and brush). The Hayman Fire burned some areas with an intensity that even soil organic matter was incinerated, bedrock was exposed, and the ground surface became glass-like and repelled water. The fuel condition driving the fire was a nearly unbroken mass of trees with low crowns, shrubs, and a deep layer of highly-flammable pine needles on the forest floor. Most of this land was National Forest managed by the US Forest Service (USFS). Although this forest type was historically adapted to fire, this level of fuel was exacerbated by a long history of fire suppression and lack of proactive management such as prescribed burning.

In early conversations and reports, Denver Water blamed the USFS for their failure to manage fuels and reduce the risk of catastrophic wildfire. However, eventually an understanding developed between two forward-thinking leaders, Denver Water Chief Chips Berry and USFS Rocky Mountain Regional Forester Rick Cables. Through this relationship, Denver Water began to understand the very real budgetary and regulatory constraints that limited the US Forest Service’s ability to proactively reduce the threat of catastrophic wildfire.

### **Administering the Partnership**

The understanding and learning that developed between Denver Water and the USFS led to 18-months of negotiations and a 2010 Memorandum of Understanding<sup>52</sup> (MOU) between the two parties that outlined mutual benefit and interests and articulates each party’s role. The MOU is supported by a US Government-required “Collection Agreement” which provides the mechanism by which Denver Water reimburses the USFS for on-the-ground work.

The goals and activities of the joint programme include:

- Reduce wildfire risk through forest thinning, prescribed fire, and other forest health treatments;

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<sup>51</sup> Collection System (2015)

<sup>52</sup> 10-MU-11020000-046, under the authority of the Cooperative Funds Act of June 30, 1914 (16 USC. 498 as amended by Pub.L. 104-127)

- Restore areas that are currently recovering from past wildfires to reduce sedimentation of the reservoirs through tree planting, riparian vegetation improvements, and other rehabilitation activities; and
- Minimise current erosion and sedimentation of reservoirs through the decommissioning and improvement of roads, mine reclamation, stream improvements, and other watershed restoration activities.

The parties developed and update annually a five-year operating plan and associated financial plan that specifies treatment zones and planned activities within each of the five priority watersheds. Each year, the parties meet to update any changes in treatment zones, planned activities, projected area accomplishments, and estimated costs.

The USFS administers the on-the-ground projects and then bills Denver Water for reimbursement. While forest treatments may be initiated in the agreed-upon fiscal year (1 October to 30 September), it may take USFS two to three years to complete the work and bill Denver Water for reimbursement. This delayed billing cycle originally frustrated Denver Water, and is an example of how administrative differences between organisations must be identified and overcome.

- Denver Water’s funds total \$16.5 million USD over five years and are used only for on-the-ground work including unit layout, task order development, contract administration, and treatment implementation.
- The USFS contribution totals \$21.7 million USD over five years and includes in-kind staff time to oversee and administer all work done on the National Forest, including conducting the planning and survey work needed to ensure all activities meet applicable laws and regulations.

Designated USFS staff consult with their colleagues to develop the technical basis for projects that meet the partnership’s goals and then propose them annually to Denver Water for agreement and prioritisation. Denver Water largely defers to the expertise of USFS to design appropriate projects, but plays a strong role in setting objectives and prioritising projects. In addition, a collaborative group including Denver Water, local USFS contacts, and a regional programme coordinator meet periodically during the year to discuss issues and needs. The USFS attends a formal meeting of the Denver Board of Water Commissioners to present results and address questions.

## **Accomplishments**

Direct private sector benefits: Denver Water is highly satisfied with the project and has already moved to expand it because they believe the project has reduced the risk of catastrophic wildfire to their water supply and infrastructure in the Priority Watersheds. Denver Water has so far chosen not to quantify the effect of the project as “costs avoided” for their customers, and instead measures output in hectares and points to the huge expense of trying to clean out the Strontia Springs Reservoir post-fire as an example of why continuing this proactive forest management is critical.

Direct conservation accomplishments: The project surpassed its original goal and treated approximately 18,600 ha to both restore lands burned in the Hayman Fire and proactively reduce risk on other priority lands that could threaten water supplies. Treatments included:

- 798,000 trees planted to stabilise soils and restore native forest;
- 10,700 ha treated to reduce hazardous fuels by mechanical thinning and some prescribed burning;

- Plantings and soil stabilisation to restore wetlands and streams;
- 80 miles of recreational trails restored, constructed, or decommissioned to reduce runoff and/or enhance recreational opportunities.

## Lessons Learned

*Formalising agreements and setting mutual goals at the beginning is critical:* The MOU provided a critical founding document that became the basis for all subsequent work. Therefore, those 18 months of negotiations paid off because individuals at all levels of both organisations were included and satisfied. It also helped create a template for subsequent longer-term investments by this partnership and others.

*Managing the partnership at the appropriate regional or local level is critical:* The USFS has local Forest Offices that operate similar to DOC's office regions, while the Rocky Mountain Regional Office is akin to DOC's National Office in Wellington. This partnership established streamlined MOUs and Collection Agreements at the USFS Rocky Mountain Region level for partners whose interests cross forest lines. However, the Rocky Mountain Region left it to the local Forest Offices to provide active involvement and decision space about the on-the-ground work being done in their local area.

*Creating multi-year project plans with flexibility for annual adjustments is critical:* This combination of long-term and annual planning has helped all partners incorporate investments into both long-term and annual budgets.

*Relationship-building and public recognition is critical:* Just like any human relationship, lasting partnerships cannot be taken for granted. Partners must be recognised publically at key junctures. Gestures such as annual presentations by high-level USFS leaders at the Denver Board of Water Commissioners goes a long way to showing gratitude.

*USFS staff capacity is a limiting factor:* There is growing interest by partners to expand and grow this model on USFS lands; however, the USFS does not have excess capacity to manage the business side of the relationship or design more on-the-ground projects. The agency is currently working to build staff capacity so that it can add new partnerships with minimal impacts and maximum benefits.

*Billing practices for the USFS are limited and do not easily match Denver Water's expectations:* USFS is limited to using collection agreements as the primary financial mechanism under federal law, and the partnership agreement called for USFS to be reimbursed only after the work is done. However, the billings based on collection agreements are considered confusing to interpret and are not project- or outcome-specific. In the first years of the partnership, USFS billings were unpredictable and delayed. The partners compromised on a happy medium, so that the USFS now bills annually and Denver Water pays the bill out of annual reserves rather than an annual budget to account for unpredictability in when work may be completed. Many delays can be beyond the USFS control, such as contracting delays, weather, and other regulatory challenges of doing work on public lands. The USFS is currently working through its internal administrative and legal processes to provide streamlined financial agreements with outcome-based invoicing and reporting for existing and new partners. The agency is also exploring options for partners to jointly fund projects on both public and private land and to "bundle" funds from multiple partners together.

## **6 CONCLUSIONS AND RECOMMENDATIONS: OPPORTUNITIES RELATED TO PRIMARY INDUSTRY PARTNERSHIPS**

In summary, there is tremendous opportunity for DOC to continue and expand partnerships with primary industry. The case studies and industry interviews show that there is interest by industry and important conservation gains to be made from doing so.

The case studies and industry interviews also reveal a set of common themes that indicate important operational details for DOC and industry to consider and therefore build even more effective win-win-win partnerships for the agency, industry, and the general public.

New Zealand has regional variability that drives unique local partnerships. However, it is my hope that the case studies and these recommendations can encourage cross-regional learning while maintaining local flexibility and creativity.

In this final chapter, I organise the findings and recommendations for operational details into the three “phases” of a partnership:

- A. Prospect Phase:** Proactive ideas for who, how, and what message to use when considering new potential primary industry partnerships.
- B. Start-Up Phase:** Operational details to have in place up-front and before work begins.
- C. Implementation Phase:** Critical components to have in place over the life of the partnership.

I want to acknowledge that DOC is already implementing many of these strategies. When that is the case, I re-state their importance merely to emphasise that they are important and encourage DOC to continue on that course.

Many of my recommendations are designed for DOC since it is my host agency. However, this chapter concludes with recommendations for primary industry because partnerships require participation and commitment by both sides.

### **A. Prospect Phase**

#### **Targeting and looking for opportunities – be proactive and approach potential partners with shared values**

It appears that many of DOC’s current partnerships are initiated by partners, as opposed to being a proactive decision by DOC. Proactive targeting would serve DOC well.

Based on the academic literature and the findings here, there are several key characteristics that DOC should consider when looking for potential new business partners. These characteristics include:



- Organisations with executive or board leadership that cares passionately about conservation. This matches the motivations from the case studies and interviews and also matches the scientific literature that one of the strongest drivers to overcome business barriers to sustainability were the values and beliefs of senior management.
- Organisations where there is an opportunity for a solid private sector and public sector benefit, i.e. riparian plantings, pest control, etc.
- Businesses that rely on international markets and third-party certification.

These characteristics build on shared values and finding a natural nexus between DOC and a potential business partner. I am confident that DOC has some potential partners in mind already, but I would like to offer some specific ideas:

- New Maori-owned businesses related to Treaty of Waitangi settlements.
- Forestry companies, especially those who share a common border with DOC conservation land and who are large exporters that rely on certification from the Forest Stewardship Council (FSC).
- ZESPRI, the international marketer for New Zealand kiwifruit.

### **Approaching a potential partner – consider using a “go-between” or messenger and establishing a Business Leadership Council**

One comment that I heard repeatedly was that DOC does not know how to communicate with business. This could be addressed by hiring more people with business experience, but that will take a long-term shift and organisational change. Therefore, I strongly recommend that DOC consider relying on “go betweens” or people who can effectively introduce DOC to their colleagues.

I recommend that DOC create a Business Leadership Council to advise the agency on business partnerships and help approach potential new partners. The Business Leadership Council should comprise CEO-level leaders who are trusted, already familiar with DOC and partnerships, and who can speak authoritatively with their peers at the CEO level about the business case for partnering with DOC. Several business leaders emphasised the importance of having initial conversations at the CEO level, both as CEO-to-CEO business peers and the highest level of DOC leadership.

DOC should initially rely on the peer-to-peer conversations by the Business Leadership Council to communicate the initial reasons for why a partnership is beneficial (i.e. the business case). These CEOs know how to discuss business benefits far better than DOC ever could and can authoritatively explain why they choose to partner. DOC should then follow-up based on the lead and advice of the Business Leadership Council, and primarily explain the value of a partnership from a conservation perspective.

### **The Key Message – focus on conservation**

DOC is the leading body of experts in the country on New Zealand’s biodiversity and the threats to it. Given that, and the findings here that most partners are motivated by conservation values, DOC should communicate based on what they know and focus on the conservation benefits. After a business has had initial contact and shown interest with a member of the Business Leadership Council, DOC should speak with passion about the nation’s biodiversity, the threats to it, and what “keeps you up at night.” Inspire possible partners by telling them the role they can play in preserving a key part of New Zealand’s legacy for the future. DOC still needs to do its homework and ensure

they understand the business, but the primary message should be one that DOC can be passionate about:

*Engage their imagination with stories of success and get them to think about how they might assist and what success might look for them. Have enough understanding of their business when you walk in the door that the CEO will say “good point.” Do your homework.*

–Phil O’Reilly, Business NZ

I repeatedly heard a negative perception both inside and outside DOC that partnerships are necessary to compensate for declines in DOC’s budget. However, the truth is that, regardless of DOC’s budget, primary industry manages over a third of the country and thus must be engaged in conservation if there is to be any hope of preserving New Zealand’s unique biodiversity. DOC is not going to industry because it wants a hand-out. Preserving the nation’s biodiversity is not just the government’s job. All levels of DOC must believe and act with conviction that partnerships are necessary for biodiversity reasons, not financial reasons. This attitude-shift could help motivate and impassion DOC staff *and* potential business partners.

**Natural Capital and Ecosystem Services Messages:** A secondary goal of my research was to look at whether and how the quantified concepts of natural capital and ecosystem services applied to decision-making by business about public-private sector partnerships. Although I looked hard, it appears that economic calculations and “bottom-line” numbers were not an important factor for any of the case studies or industry interviews. Instead, partners were motivated by other factors such as personal relationships, a shared appreciation and dedication to the land, and being a good neighbour or corporate citizen.

The one exception was the US example of the US Forest Service and Denver Water. However, even in that example, Denver Water specifically chose to avoid quantifying the ecosystem services they received. Even though it appears that natural capital messages are not effective when appealing to individual businesses, it is my hope that the case studies – especially the US example – can still be used to help illustrate the concepts of natural capital and ecosystem services.

### **Analyse DOC capacity before making commitments**

There is a misperception that public-private partnerships can accomplish more with less DOC staff and commitment. In fact, every example here was the opposite and actually required more staff.

Nearly every case study and interview raised the concern that DOC staff capacity, turnover, and/or the restructures were a barrier. I did not do a detailed analysis of staff capacity, but the fact that the issue of capacity was raised consistently means that it is a persistent perception by partners. Applying project management principles could help, but there appears to be a systemic impression that DOC staff are asked to add new partnership responsibilities on top of their existing workload.

Moving forward, I recommend that DOC incorporate a clear analysis *before* committing to a partnership. This analysis should start with the assumption that new partnerships take additional resources at the field, manager, and executive level. Based on that assumption, DOC should carefully consider the conservation benefits of entering into a

new partnership, compared with the conservation losses that can occur if existing DOC workloads are impacted. This analysis is important for two reasons: (1) it will help evaluate whether a business partnership will provide a significant net gain for conservation; and (2) it will help inform project management and staffing decisions before the partnership gets underway, thereby leading to a smoother start-up and implementation phase.

### **Adopt an open and pragmatic approach**

One of the most important elements of this Prospect Phase is for all partners to listen and learn from one another. The interviews revealed several consistent themes about DOC that – if unaddressed – could undermine successful business partnerships because they undermine the ability of business and DOC to listen and learn from one another:

- DOC is only interested in their own conservation lands
- DOC has a lot of people who just don't like capitalism
- DOC staff don't spend enough time interacting with the community
- DOC shows up with a plan already laid out based on their expertise, and doesn't give others an opportunity to learn or incorporate other ideas or needs
- DOC mostly just says “no” whenever we suggest anything
- DOC invites us to participate with them, but doesn't ask for our input at an early stage when it still matters.

In the Prospect Phase, DOC and potential partners should allow extra time to listen and understand the other's needs, motivations, and limitations. DOC may need to be pragmatic in this phase. For example, Project Aorangi might never have moved forward if DOC was not willing to be flexible about deer in the Forest Park. Similarly, in the US example, both the US Forest Service and Denver Water were willing to adjust their billing and payment schedules to allow for the needs of both sides. Listening and building common ground can help build a real win-win-win project, as opposed to DOC showing up with a project already in mind.

### **Be Cautious – protect your reputation**

DOC's reputation with the public is one of its greatest assets, and several interviewees expressed concern that business partnerships could endanger it. This damage could occur if DOC is seen as “greenwashing” a business or if conservation gains are not obvious. Another concern is that DOC will be so busy working with wealthy individuals or businesses that staff will not have time to work with “regular Kiwis.” Several individuals expressed that with the limited philanthropic dollars available in a small country like New Zealand, DOC is the “big dog” that could take dollars that would have otherwise gone to community groups.

*Be very thoughtful about competing with community groups. You can't compete and be a partner with the same agency. DOC needs to contribute as well as take and if they start competing with their most ardent supporters they will lose support.*

–Professor Dame Anne Salmond, Ph.D.  
2013 New Zealander of the Year  
The University of Auckland

The only way to address this concern is to be aware of it and do a risk analysis in this early Prospect Phase.

## **B. Start-up Phase**

### **Be clear on common goals and operating procedures and implement strong project management techniques from the beginning**

It is critical that goals, timelines, and roles and responsibilities are clear from the very beginning of a project. The projects profiled here indicate a wide variety of different approaches, ranging from the very detailed and comprehensive project management approach of “Living Waters” to the much simpler general strategy and action plan adopted by “Project Aorangi.” The case studies indicate that there were several instances where unclear expectations and project management led to tension later in the project, such as perceived delays for bird reintroductions and community outreach at Poutiri Ao ō Tāne and Project Aorangi. All partners need to improve by implementing realistic project management techniques, including staffing, schedules, and responsibilities. However, the level of complexity can still vary based on local conditions. For example, the US Forest Service and Denver Water had a five-year operating plan, but allowed for annual adjustments at the local level.

The impacts of staff turnover and DOC reorganisations were recurring issues raised for the case studies and interviews and seemed to persist across the agency. Implementing strong project management and recording techniques should help ease the transition and maintain schedules and lines of responsibility even when there is significant staff turnover.

### **The culture clash is inescapable, but both sides have a responsibility to compromise**

One of the most consistently cited challenges of public-private sector partnerships is the clash that occurs between the business culture and government culture. The only way to address this is to expect it, and thus allow more time at the beginning of the partnership to sort out cultural differences. The case studies of Poutiri Ao ō Tāne and Fonterra are good examples where frustration grew over time because cultural expectations were not understood and sorted out early in the relationship.

Nearly every industry representative interviewed for this project expressed frustration over the slow pace of government decision-making and implementation. In general, industry expects to see a clear start and finish, with solid and executable goals, accountability, budgets, and reporting periods. This is a valid concern, and DOC must continue to streamline process and shorten the time and procedures necessary to get things done. However, it is also critical that DOC take the opportunity at the beginning of a project to educate industry about the differences between conservation work (i.e. translocating a rare bird) and standard industrial production (i.e. planting a tree), because unique unknown factors such as seasons, weather, ranges, and genetics can play a role. Setting realistic expectations early can smooth the way for a better partnership over time.

*From my experience of interacting with DOC it seems our values are very well aligned. However, as organisations we operate differently. We recognise that*

*at times DOC will move slower and has different objectives to a corporate organisation. You can't change that, but by investing significant time into the development of the relationship up front it is possible to find areas of rich shared value.*

—James Gibson, Air New Zealand

## **C. Implementation Phase**

### **Measurement and associated research is critical**

Measurement is critical to track the progress and conservation value of a project. In the case of public-private partnerships, it is even more critical because industry has a reasonable expectation for measurable goals and accountability that can be incorporated into project management. Business may not have the expertise to track natural resource metrics, but DOC does and should rely on that expertise as a key benefit the agency can bring to the partnership. For example, tracking associated with Falcons to Grapes revealed that even though the falcons may have been meeting the business purpose of protecting vines from pest birds, the conservation goal was failing due to falcon deaths from electrocution; the project was subsequently suspended. Similarly, tracking the effectiveness of specialised trapping methods at Poutiri Ao ō Tāne revealed that it was still effective when done in a more cost-effective design, which eventually led to the expansion of the project to Cape-to-City. The Fonterra partnership did an admirable job of setting up baseline studies so that the effect of the multitude of projects could be tracked over time.

As tempting as it is to get started and immediately begin implementing on-the-ground projects, it is critical to ensure that the right people are involved from the beginning to design a tracking and research programme that will meet the needs of both parties.

*If you can publicise and measure the success of a project, business will rush toward it.*

- Phil O'Reilly, Business NZ

### **You can't say thank you enough**

The importance of mutual appreciation and recognition cannot be overstated. *Both sides* of the partnership should never miss an opportunity to recognise their shared efforts and the efforts of others in the community, such as iwi, other agencies, and other interest groups. Recognition can include public ceremonies, but also includes smaller gestures that can occur throughout the life of a project. For example, Denver Water made a special point that they appreciated USFS leadership's annual visit to their Board of Directors. Several industry interviewees raised the issue that they had attended events and no one ever recognised them, and occasionally even questioned why they were there. As previously stated, partnerships are just like any other human relationship and need to be nurtured over the long-term if they are to continue to grow and develop.

## Recommendations for Primary Industry

### Reasons industry should consider public-private partnerships

I was heartened by the opportunities and positive responses I heard in my industry interviews, and I urge primary industry representatives to strongly consider getting more actively involved in conservation, including considering public-private sector partnerships. Some of the benefits that industry cited include:

- An enhanced relationship with regulators. Getting to know DOC personnel on a personal basis can be helpful over the long term, just like any other community relationship.

*It's all about maintaining our relationships because we are here for the long haul and want to be seen as good operators.*

–Brett Gilmore, Pan Pac Forest Products

- Play a role in maintaining New Zealand's clean, green brand. Maintaining the resources that drive New Zealand's clean, green brand is a common interest for both DOC and primary industry. Industry – especially companies that operate internationally – need a social licence to operate. It is a false choice to encourage either business or the environment, because there is ample evidence (including in this report) that they can coexist. And as stated earlier, DOC is not developing partnerships to compensate for budget cuts. Preserving the nation's biodiversity is not just the government's job. Primary industry manages a third of the country and thus must be engaged in conservation if there is to be any hope of preserving New Zealand's unique biodiversity.

*New Zealand's most important asset is the natural environment and with that the benefits that our society and economy derive from it. Examples include our outdoor lifestyles and the 100% Pure brand of many of our products and services.”*

–Mark Drury, Executive General Manager,  
AECOM New Zealand<sup>53</sup>

*It's cool to have kiwi on your land!*

Brett Gilmore, Pan Pac Forest Products

- Third-party certification and corporate citizenship. Many of New Zealand's primary industries are very dependent on third-party certification. Over 50 per cent of New Zealand's 1.8 ha of plantation forests, especially those for the international export market, are certified by the Forest Stewardship Council.<sup>54</sup> Similarly, the New Zealand Winegrowers<sup>55</sup> provide third-party certification for virtually all of the country's wine industry.

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<sup>53</sup> *Business and Ecosystems: Identifying Risks and Opportunities* (2015)

<sup>54</sup> <http://www.nzfoa.org.nz/plantation-forestry/certification/fsc-overview>

<sup>55</sup> <http://www.nzwine.com/sustainability/sustainable-winegrowing-new-zealand/>

There may be creative ways that industry could use a public-private partnership to support some of the intangible parts of their certification requirements. For example, forestry companies may be able to cite work with wilding pine control or rare bird recovery as additional conservation actions toward FSC certification.

*Being able to demonstrate that you are a good corporate citizen or good community player is an important part of certification and auditing.*

–David Rhodes, New Zealand Forest Owners Association

### **Evaluate your business risks and opportunities related to ecosystem services**

The scientific literature summarised in the introduction found that many small and medium-sized businesses in New Zealand do not participate in sustainability practices because they perceive that they have very little individual impact, or because they lack the expertise or capability to address environmental issues. I heard similar themes in many of my industry interviews.

New Zealand primary industry now has tools at its disposal to begin to address these issues and have an impartial, scientific, and business approach to evaluating the risks and opportunities that ecosystem services provide. The Sustainable Business Council developed a new tool called the “Corporate Ecosystem Services Review.” This tool was piloted by five New Zealand companies who presented their experiences at a workshop in March 2015. I urge primary industry representatives to investigate this tool and consider using it to understand their risks and opportunities.<sup>56</sup>

*Industry is getting better at managing impacts, but we still need to think about risks and opportunities of ecosystem services. The elephant in the room is our dependency on ecosystem services, which leads to risks and opportunities. Your business could be impacted by:*

- *Community/social licence*
- *Competition for land and inputs*
- *Compliance*
- *Climate change*
- *Condition/ecosystem health, for example, if kiwi go extinct outside reserves, if water quality goes down, how will that affect the 100% pure brand?*

–excerpts from *Business and Ecosystems: Identifying Risks and Opportunities*, 26 March 2015, Sustainable Business Council, AECOM Headquarters, Auckland, New Zealand<sup>57</sup>

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<sup>56</sup> <http://www.sbc.org.nz/resources-and-tools/case-studies/science-and-innovation/esr>

<sup>57</sup> Recorded presentations online at <http://www.sbc.org.nz/resources-and-tools/video-gallery/business-and-ecosystems-identifying-risks-and-opportunities>

## **In Conclusion...**

If there is one take-away message that applies to this entire report, it is that *relationships matter*. Partnerships are like any other human relationship, and are based on people, personal interactions and mutual respect.

*What's the value of my investment, my culture, your values? It's not just about money. Relationships are the key, and relationships with the tangata whenua ("people of the land") are absolute.*

—Shayne Walker, Maungaharuru Tutira Inc, General Manager

*When you set people down, they tend to have way more in common than not in common. There will be differences, but technology is so helpful to help bridge the sticking points.*

—Paul Cutfield, Aorangi Restoration Trust

New Zealand has an opportunity to set a model for the world in how to build a sustainable natural environment and economy, and it is my hope that these case studies and insights can support even more public-private partnerships that are a win-win-win for the agency, industry, and the general public.



## BIBLIOGRAPHY

*2015 Award Winners* (12 June 2015), Randstad, retrieved 15 June 2015 from <http://www.randstad.co.nz/about-randstad/randstad-award/randstad-award-per-year/previous-winners-in-new-zealand/2015-nz-winners>.

*Animal Pests* (n.d.). New Zealand Department of Conservation. Retrieved 5 June 2015 from: <http://www.doc.govt.nz/nature/pests-and-threats/animal-pests/>

Bansal, P. and Roth K. (2005). 'Why Companies Go Green: a Model of Ecological Responsiveness', *Academy of Management Journal*. Vol. 43(4), p 717-736.

*Business and Ecosystems: Identifying Risks and Opportunities*, 26 March 2015, Sustainable Business Council, AECOM Headquarters, Auckland, New Zealand: recorded presentations online at <http://www.sbc.org.nz/resources-and-tools/video-gallery/business-and-ecosystems-identifying-risks-and-opportunities>.

*Conservation Partnerships kete [for partnerships staff]* (n.d.). New Zealand Department of Conservation. Internal document.

*Cape to City: It's In Our Nature* (30 April 2015), Napier, New Zealand. Speakers event.

*Collection Agreement between the City and County of Denver, Acting by and through its Board of Water Commissioners and the USDA, Forest Service Rocky Mountain Region*. USDA Forest Service (15 December 2014). FS Agreement No 15-CO-11020000-002 Cooperator Agreement No. 15752A.

*Collection Agreement Financial Plans (Pike-San Isabel National Forests, Arapahoe and Roosevelt National Forests, White River National Forest)*. USDA, Forest Service (2014).

*Collection System* (n.d.), Denver Water. Retrieved 13 May 2015 from: <http://www.denverwater.org/SupplyPlanning/WaterSupply/CollectionSystem/>

Collins, E., S. Lawrence, K.Pavlovich, and C. Ryan (2007) 'Business networks and the uptake of sustainability practices: the case of New Zealand', *Journal of Cleaner Production*, 15: 729-740.

*Denver Water Partnership – A case study in Public-Private Partnership*. U.S. Forest Service Rocky Mountain Region (28 April 2015). Internal document. Contact Brian Ferebee, Deputy Regional Forester.

*Denver Water/U.S. Forest Service Partnership 5-Year Operating Plan (2011-2015) – Version 5*. (30 October 2014). This plan supports memorandum of Understanding 10-MU-11020000-046 between the U.S. Forest Service Rocky Mountain Region and the City and County of Denver, Board of Water Commissioners.

*Department of Conservation Annual Report* (2014), Wellington: Department of Conservation. <http://www.doc.govt.nz/annual-report-2014>

*Economic Costs of Pests to New Zealand* (2008), MAF Biosecurity New Zealand Technical paper No: 2009/31, Report prepared by Nimmo-Bell for MAF Biosecurity New Zealand. Wellington: Ministry of Agriculture and Forestry.

*Evaluating the use of 1080: Predators, poisons, and silent forests* (June 2011). Parliamentary Commissioner for the Environment, Wellington, New Zealand.

*Farmers back a pioneering environmental restoration project* (1 May 2015), Hawke's Bay Regional Council. Retrieved 7 May 2015 from <http://www.hbrc.govt.nz/News-Events/Media-Releases/Pages/Farmers-back-Cape-to-City.aspx>.

Fraser, K.W. (2000), 'Status and conservation role of recreational hunting on conservation land', *Science for Conservation 140*. Published by Department of Conservation, Wellington, New Zealand. Retrieved 1 June 2015 from: <http://www.conservation.govt.nz/Documents/science-and-technical/sfc140.pdf>

*From Forests to Faucets: U.S. Forest Service and Denver Water Watershed Management Partnership* (n.d.), Denver Water. Retrieved 13 May 2015 from: <http://www.denverwater.org/SupplyPlanning/WaterSupply/PartnershipUSFS/>

Gabzdylova, B., J.F. Raffensperger, and P. Castka (2009) 'Sustainability in the New Zealand wine industry: drivers, stakeholders, and practices', *Journal of Cleaner Production*, 17: 992-998

Glen, A and R. Dickson. (2015), 'Wide-Scale predator control for biodiversity in Hawke's Bay', *Kararehe Kino* Issue 25

Graham, R T [Technical Editor] (2003), 'Hayman Fire Case Study', *General Technical Report RMRS-GTR-114*, Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 396 p.

Grant, Ian F. (ed.) (2012), *Wairarapa Moana: The Lake and Its People*. Fraser Books, Masterton, New Zealand.

*Greening New Zealand's Growth: Report of the Green Growth Advisory Group* (December 2011), Green Growth Advisory Group Secretariat, Ministry of Economic Development, Wellington, New Zealand.

Hartley, S. (2014), 'Annual report to Tb Free New Zealand – December 2014: Biodiversity responses to possum-control in Aorangi and Haurangi Forests', Victoria University of Wellington.

Hutching, Gerard, 'New technology makes predator control easy', *NZFarmer.co.nz*, 4 May 2015.

Innes, J, Kelly, D., Overton, J.M. and Gillies, C. (2010). 'Predation and other factors currently limiting New Zealand forest birds'. *New Zealand Journal of Ecology* 34: 86-114.

Jones, C, and G. Norbury, A. Glen, and R. Dickson (2015), 'Predator control benefits native species but not rabbits', *Kararehe Kino* Issue 25

Kang J., C. Liu and S. Kim (2013). 'Environmentally sustainable textile and apparel consumption: the role of consumer knowledge, perceived consumer effectiveness and perceived personal relevance', *International Journal of Consumer Studies, Special Issue: Consumer Issues in Retailing*, Vol 37(4), pp. 442-452.

Kean, E.F. (2009). *Effectiveness of New Zealand Falcon (Falco novaeseelandiae) presence in Marlborough vineyards for bird control – objective measurement and identification of obstacles to adoption by the industry*. A dissertation at Lincoln University.

Kross, S.M., J.M.Tylianakis and X.J.Nelson (2011). 'Effects of introducing threatened falcons into vineyards on abundance of passeriformes and bird damage to grapes', *Conservation Biology*, 26(1), pp. 142-149.

- Land area (sq. km)* (2014), World Bank. Retrieved 3 June 2015 from <http://data.worldbank.org/indicator/AG.LND.TOTL.K2/countries?display=default>
- Ledgard, N.J. (2012) ‘The risk of wilding conifer spread into Mt. Richmond Forest Park: A review of the present and future situation.’ Report prepared for Department of Conservation (Nelson), Nelson Forests Ltd, Tasman Bay Forests Co Ltd (Hancock Forest Management) and Tasman District Council.
- Lozano, R. (2015) ‘A holistic perspective on Corporate Sustainability Drivers’, *Corporate Social Responsibility and Environmental Management*, 22, 32-44.
- Mainland islands* (n.d.), New Zealand Department of Conservation. Retrieved 7 May 2015 from: <http://www.doc.govt.nz/our-work/mainland-islands/>
- Mairi, J & M. Morad (2007). ‘Crying Over Spilt Milk: A Critical Assessment of the Ecological Modernisation of New Zealand's Dairy Industry’, *Society & Natural Resources: An International Journal*, 20:5, 469-478
- Matthews, Philip., ‘The true cost of DOC budget cuts’, *stuff.co.nz*, 13 April 2013.
- Memorandum of Understanding between the Director-General of Conservation and Nelson Forests Limited*, 6 September 2011.
- Memorandum of Understanding between the City and County of Denver, Acting by and through its Board of Water Commissioners and the USDA, Forest Service Rocky Mountain Region*. USDA, Forest Service (29 July 2010). FS Agreement No. 10-MU-11020000-046.
- Millennium Ecosystem Assessment* (2003), United Nations Environment Programme.
- Moller, H., C. J. MacLeod , J. Haggerty, C. Rosin , G. Blackwell , C. Perley , S. Meadows, F. Weller and M. Gradwohl (2008). ‘Intensification of New Zealand agriculture: Implications for biodiversity’, *New Zealand Journal of Agricultural Research*, 51:3, 253-263.
- Murdock, S.G. (21 March 2015). ‘Waikato cows,’ Digital cartoons published in the *Dominion Post*, *The Press*, *Timaru Herald* and *Waikato Times*. Ref: DCDL-0030706. Alexander Turnbull Library, Wellington, New Zealand. Retrieved 15 June from <http://natlib.govt.nz/records/35714444>
- National DOC/Fonterra Living Water Operating Agreement* (2013).
- New Zealand Economic and Financial Overview 2015* (24 March 2015), Wellington: The Treasury. <http://www.treasury.govt.nz/economy/overview/2015/nzefo-15.pdf>
- Nielsen Company (2014), *Survey of New Zealanders*. Report prepared for the Department of Conservation, the Nielsen Company, Wellington, New Zealand. <http://www.doc.govt.nz/Documents/about-doc/role/visitor-research/survey-of-new-zealanders-2014.pdf>
- Our Progress – Making a Difference in Five Key Catchments: Annual Report March 2013-June 2014* (2014). Fonterra and New Zealand Department of Conservation.
- PHV Case Study #1: Gaining Altitude... DOC's Great Walks and the Air New Zealand Partnership* (2015). New Zealand Department of Conservation. Internal document. Wellington, New Zealand.
- Poutiri Ao ð Tāne Impact Report: 2014 Large-scale collaborative restoration project*, (2014). New Zealand Department of Conservation. Ahuriri-Napier Office.

*Poutiri Ao ō Tāne Project Learning Exercise*. New Zealand Department of Conservation (2014). Internal report, Wellington Office.

*Poutiri Ao ō Tāne Report* – Prepared for the Aotearoa Foundation (2014), Internal report, New Zealand Department of Conservation.

Pratt, J-P, J. Sukias and T. Faulkner (2015). '*On-Farm Drainage Remediation Projects to Protect Wairarapa Moana*'. In: Moving farm systems to improved attenuation. (Eds L.D. Currie and L.L. Burkitt). <http://flrc.massey.ac.nz/publications.html>. Occasional Report No. 28. Fertiliser and Lime Research Centre, Massey University, Palmerston North, New Zealand.

*Project Aorangi – Haumanu kia Haumako pest control programme (May 2014)*. TBfree New Zealand. Retrieved 25 May 2015 from: <http://www.tbfree.org.nz/Portals/0/3108%20OSPRI%20TBfree%20Aorangi%20PCP%20HSP493%20v4.pdf>.

*Project Aorangi – Haumanu kia Haumako: Strategy and Action Plan 2014-2017*. Internal document.

Seaton, R., Fox, N.C., Wynn, C. And Olley, L. (2011). *The Marlborough New Zealand Falcon conservation programme: Lessons learnt and future directions*. International Wildlife Consultants report, UK.

Shrivastava P. And S. Hart (1995) 'Creating sustainable corporations', *Business Strategy and the Environment*. 4(3): 154-165.

Stewart, Matt, '100% Pure Fantasy? Living up to our brand', *stuff.co.nz*, 1 December 2012.

Stringleman H. and F. Scrimgeour. (2012) 'Dairying and dairy products - Dairy exports', *Te Ara - the Encyclopedia of New Zealand*, updated 13-Jul-12 URL: <http://www.TeAra.govt.nz/en/dairying-and-dairy-products/page-11>

Suchman, M.C. (1995) 'Managing legitimacy: Strategic and institutional approaches'. *Academy of Management Review*, 20(3) 571-610.

Tao, Lin, 'Kiwi brands among the most influential', *stuff.co.nz*, 14 May 2015.

*The Export Goal* (5 March 2015), Ministry of Primary Industries. Retrieved 24 May 2015 from: <http://www.mpi.govt.nz/about-mpi/our-strategy-2030/the-export-goal/>

*The New Zealand Biodiversity Strategy: Our Chance to Turn the Tide* (February 2000). Department of Conservation and Ministry for the Environment, Wellington, New Zealand.

Tompkins, D.M. (2014). *Potential of Feral Cat Control to Reduce the Incidence of Toxoplasmosis on Sheep Farms – Report Addendum*. Report prepared for Hawkes Bay Regional Council by Landcare Research, Dunedin, New Zealand.

UK Natural Capital Committee. *Natural Capital* (n.d.), Retrieved 16 June 2015 from: <http://www.naturalcapitalcommittee.org/natural-capital.html>

*Vail Resorts – National Forest Foundation – a case study in Public-Private Partnership*. US Forest Service Rocky Mountain Region (28 April 2015). Internal document. Contact Brian Ferebee, Deputy Regional Forester.

Western Forestry Leadership Coalition (2010), *The True Cost of Wildfire in the Western US* Lakewood, Colorado.

Wilding pines (n.d.), Department of Conservation. Retrieved 16 June 2015 from <http://www.doc.govt.nz/nature/pests-and-threats/common-weeds/wilding-pines/>

Windolph, S.E., D. Harms, and S. Schaltegger (2014) 'Motivations for Corporate Sustainability Management: Contrasting Survey Results and Implementation'. *Corporate Social Responsibility and Environmental Management*. 21, 271-285.

## **Interviews**

*Laurence Barea, DOC Hamilton Office, 28 May 2015*

*Tim Barnard, Scion, 9 March 2015*

*Leana Barribal, DOC National Office, 13 February 2015*

*Andrew Bignell, DOC National Office, 9 February 2015*

*Phil Bradfield, DOC Wairau Office, 17 April 2015*

*Nigel Bradly, consultant, 10 April 2015*

*Melissa Brignall-Theyer, DOC Napier Office, 13 April 2015*

*Warwick Bucknam, Kaimai Mamaku Campaign, 6 March 2015*

*David Carlton, DOC Napier Office, 30 April 2015*

*Al Check, DOC Nelson Office, 15 April 2015*

*Mark Christensen, AndersonLloyd (attorney), 26 March 2015*

*Spencer Clubb, DOC National Office, 10 February 2015*

*Nick Cradock-Henry, Landcare Research, 18 March 2015*

*Paul Cutfield, Aorangi Restoration Trust, Aorangi Recreational Hunters, 30 May 2015*

*Rod Dickson, Hawke's Bay Regional Council, 17 April 2015*

*Jay Eden, DOC National Office, 11 March 2015*

*Mike Edginton, DOC National Office, 29 January 2015*

*Geoff Ensor, DOC National Office, 19 March 2015*

*Shane Geange, DOC National Office, 24 February 2015*

*James Gibson, Air New Zealand, Head of Sustainability, 26 March 2015*

*Brett Gilmore, Pan Pac, 11 May 2015*

*Sean Goddard, Fonterra/DOC, 18 March 2015*

*Suzie Greenhalgh, Landcare Research, 25 March 2015*

*Ian Gunn, Wellington Regional Council, 25 May 2015*

*Ed Handisides, Wairarapa farmer, 28 May 2015*

*Duncan Harrison, Scion, 9 March 2015*

*Rod Hay, DOC Christchurch Office, 25 February 2015*

*David Hayes, DOC Wairau Office, 31 March 2015*

*Geoff Hicks, DOC National Office, 9 February 2015*

*Alistair Holmes, Foundation for Arable Research, 6 March 2015*

*Peter Huggins, DOC Tauranga Office, 5 March 2015*

*Ken Hughey, DOC National Office, 27 January 2015*

*Sarah Kafka, Aotearoa Foundation/Julian Robertson Foundation, 8 May 2015*

*Reg Kemper, DOC National Office, 11 March 2015*

*Don Kennedy, Denver Water, 9 May 2015*

*Felicity Lawrence, DOC National Office, 2 February 2015*

*Campbell Leckie, Hawke's Bay Regional Council, 17 April 2015*

*Chris Lester, DOC, Palmerston North National Office, 4/2/2015 and 25 May 2015*

*Huia Lloyd DOC Rotorua Office, 9 March 2015*

*Madeleine McCarroll, DOC National Office, 13 March 2015*

*Wendy McGowan, Rural Women NZ, National President, 5 March 2015*

*Doug McKenzie-Mohr, Expert and author on community-based social marketing, 9 March 2015*

*Simon Millar, Pure Advantage, CEO, 26 March 2015*

*Shirley Miller, PlusGroup Horticulture Limited (rep for NZ Kiwifruit Growers), 5 March 2015*

*Juan Monge, Scion, 9 March 2015*

*Alistair Mowat, Ministry of Primary Industries, former Director of Sustainability at ZESPRI, 21 May 2015*

*Bernie Napp, Straterra, 26 March 2015*

*Penny Nelson, Sustainable Business Council, 27 February 2015*

*Shaun O'Connor, DOC National Office, 16 February 2015*

*Phil O'Reilly, Chief Executive, Business NZ, 13 April 2015*

*Susan-Jane Owen, DOC National Office, 10 February 2015*

*Clive Paton, Aorangi Forest Restoration Trust; Ata Rangi Vineyard, 29 May 2015*

*Joyce-Anne Raihania, DOC Napier Office, 30 April 2015*

*David Rhodes, New Zealand Forest Owners Association, 25 May 2015*

*Kit Richards, PF Olsen Limited, 17 March 2015*

*Adam Riding, DOC Palmerston North Office, 25 May 2015*

*Martin Rodd, DOC Nelson Office, 31 March 2015*

*Allan Ross, DOC National Office, 12 February 2015*

*Dame Anne Salmond, University of Auckland, 25 March 2015*

*Nicola Scott, DOC National Office, 27 January 2015*

*John Scrimgeour, Federated Farmers, 6 March 2015*

*Cerasela Stancu, Fonterra, Living Water Partnership Project Manager, 19 May 2015*  
*Travis Stull, Trust Power Generation Division, 11 March 2015*  
*Richard Suggate, DOC Christchurch Office, 13 Mar 2015*  
*Aaron Taikato, DOC Whangarei Office, 1 April 2015*  
*Bella Tait, DOC Rotorua Office, 9 March 2015*  
*Chantelle Taylor, DOC National Office, 10 February 2015*  
*Sandra Velarde, Scion, 9 March 2015*  
*Shayne Walker, Maungaharuru Tangitu Inc, 30 April 2015*  
*Annie Wheeler, DOC National Office, 23 February 2015*  
*Graeme Young, Tenon Limited, 14 May 2015*