

# Project River Recovery Annual Report

1 JULY 2008—30 JUNE 2009

Project River Recovery Report 2009/01  
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## S U M M A R Y

- This report summarises Project River Recovery's progress towards its six key objectives as identified in its strategic plan for the period 1 July 2008 — 30 June 2009.
- Project River Recovery (PRR) continues to give highest priority to preventing weed invasion of the near pristine 'upper rivers', above the hydro lakes of the upper Waitaki basin. The success of this work depends on working closely with various stakeholders including Land Information New Zealand, Environment Canterbury, and landholders.
- Over four thousand nine hundred hours of targeted, ground-based spot spraying of weeds was carried out in seven riverbeds.
- Project River Recovery spent \$557,606 in the 2008/2009 financial year.
- This is the fifth complete year of trapping and monitoring results from the Tasman River predator-control project. This is a joint programme between PRR and the kākī recovery group, using a range of predator control and monitoring techniques.
  - Hatching success for banded dotterels/turiwhatu was 94%, for black-fronted terns/tarāpirohe was 30% and for wrybills/ngutu pare was 86%. Fledging success of wrybills was 21-57%, and for black-fronted terns was 13%.
- A proposal identifying 'best-effort' techniques for protection of a black-fronted tern nesting colony from predation has been completed and peer reviewed. This proposal will be implemented next year in the upper Ohau River, centred on an island breeding colony.
  
- Three sites for monitoring long-term population change of upland longjaw (*Galaxias prognathus*) in the Tasman and Hopkins rivers were re-measured.
- Wetland management has included fence maintenance, weed control and water-level manipulation at Waterwheel and Ruataniwha wetlands.
- Project River Recovery has updated and reprinted several educational resources and continues to undertake a range of

community relations activities, including giving talks to schools and universities.

- PRR staff consulted with stakeholders as required by ongoing operations.
- The braided river multi-species poster and braided river field guide continue to prove popular, and have been distributed free to many schools and visitors.

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## INTRODUCTION

Project River Recovery (PRR) is an ecological management and research programme focused on maintaining habitat and ecological communities in the riverbeds and wetlands of the upper Waitaki basin. PRR is run by the Department of Conservation (DOC) and financed by Meridian Energy Limited (MEL) under a Compensatory Funding Agreement signed in September 2006. PRR commenced operations in 1991 and its funding is linked to Meridian's resource consents for the Waitaki, which expire in 2025.

PRR is currently operating to a strategic plan for the period 1 July 2005–30 June 2012. This annual report summarises progress toward the six key objectives identified in the strategic plan, describes changes in staff, presents financial statements, and lists recent publications and internal reports, for the year from 1 July 2008 to 30 June 2009.

## STAFF

Chris Woolmore continues to manage Project River Recovery assisted by Sue Anderson and Danny Kimber. Sue has focused her effort this year on managing the constructed wetlands and continuing our surveys and monitoring of natural heritage in braided rivers. Danny works with us over the summer months focusing on the annual yellow tree-lupin eradication programme and other high-priority weed control sites. This year Danny moved on to a new job with DOC in Otago after completing his seasons work with PRR. Larger-scale weed-control is mostly undertaken by contractors OK Vegetation Control.

PRR partially funds Twizel Area Office's Community Relations Officer who spends several hours per week specifically on PRR work. PRR also jointly funds a large-scale predator-control project with the kakī recovery team in the Tasman River. Shaun Aitcheson, Glen Currall and Carol Burke run the network of predator traps and Simone Cleland monitors breeding success and population trends of selected fauna.

## PROGRESS TOWARD OBJECTIVES OF THE STRATEGIC PLAN

PRR's progress towards achieving the objectives of the strategic plan is summarised below:

### **Objective 1: Maintain indigenous vegetation and enhance habitat by removing problem weeds**

#### ***Ongoing weed-control programme***

Project River Recovery continued its programme of weed control in the main braided rivers, some of their tributaries, and in various natural and managed wetlands of the upper Waitaki basin. The total area of braided-river habitat in the large rivers of the upper Waitaki basin is approximately 32 000 hectares. PRR gives the highest priority to those sites still relatively 'clean' in terms of the number of weed species and the extent of their distribution.

One of the successes of PRR has been maintaining the excellent condition of the rivers above Lakes Tekapo, Pukaki, and Ohau, and the Ahuriri River above Longslip Creek. Invasion by several potentially damaging weeds at these sites has been prevented or reversed in its early stages. For example, the Godley and Macaulay rivers are almost entirely free of gorse and broom as a result of the combined efforts of PRR, DOC, Land Information New Zealand (LINZ), Environment Canterbury (ECan), and landholders. The rivers below the lakes, and the Ahuriri below Longslip Creek contain many more species of invasive plants, and infestations are larger in size. Not all invasive weeds can be controlled at these sites, and we continue to work towards achieving sustainable and realistic weed-control programmes.

This season good progress continues to be made with reductions in weed infestations in the Tasman, Godley, Ohau, Ahuriri and Tekapo rivers, including Fork Stream and Mistake River. PRR, Environment Canterbury and Land Information New Zealand have implemented an integrated weed-control programme in the Tekapo River for the second year, with Environment Canterbury contracting to complete the weed-control work. Excellent results were again achieved in this programme.

Once again several large patches of lupins in the middle of the Tasman River could not be accessed on foot and contractors were relocated from island to island by helicopter. In other areas where control was undertaken, contractors applied herbicides from the ground using a backpack or vehicle-mounted spray unit. Table 1 summarizes the hours and amounts of herbicide PRR used this year. Target weeds include willow, broom, gorse, wilding pines, yellow tree lupin, buddleia, oxeye daisy, Californian poppy and Russell lupin.

Contractor work practices were monitored by site visits and by regular discussions with contractors. Contractors are committed to, and have maintained, high standards. Effectiveness of weed control was monitored by regular site inspections, before and after weed control. The level of control achieved was generally excellent.

TABLE 1. PROJECT RIVER RECOVERY'S WEED CONTROL EFFORT (PERSON HOURS) AND THE AMOUNT OF HERBICIDE, PENETRANTS AND DYE USED BY PROJECT RIVER RECOVERY STAFF AND CONTRACTORS, JULY 2008—JUNE 2009. CONTRACT SPRAYING WAS DONE BY OK VEGETATION CONTROL USING KNAPSACKS EXCEPT IN THE TEKAPO RIVER WHERE ENVIRONMENT CANTERBURY USED VEHICLE-MOUNTED SPRAY UNITS.

SITE	TOTAL HOURS	SPRAY UNIT HOURS	GLYPHOSATE (LITRES)	PENETRANT (LITRES)	DYE (LITRES)	TRICLOPYR (LITRES)	TORDON (LITRES)
Tekapo	262	262		25		217	
Ahuriri	573		45	4.5	22.5		
Forks	1162.5			16.4	82.1	98.2	
Tasman	1333.5			13.2	66.5	79.8	
Twizel							
Jollie							
Ohau	1377.5		162.3	18.4	91.9		
Mistake Stream	111			1.3	6.5	7.7	
Godley	39.5			0.2	0.9	1.1	
Ruataniwha wetland							
YTL/ buddleia	79			0.4	1.0	2.0	
Waterwheel wetland							
Total	4938	262	207.3	79.4	271.4	405.8	0

### ***Yellow tree lupin***

Good progress continues to be made with the zero-density target for yellow tree lupin in the upper Waitaki basin. The number of known sites with yellow tree lupins present has remained at around 70. Encouragingly, the average number of lupins being found at these sites continues to decline compared with previous seasons. Twenty six sites have remained tree-lupin-free since 2005, and ongoing follow-up control at other sites has continued to see good progress being made. The lupin-free sites will remain on the database to be checked each year to ensure any germinating seed is removed. The GPS- and GIS-based weed database developed in 2002 continues to improve relocation of infestation sites and provide a measure of progress in reducing plant numbers over time.

### ***Buddleia***

Good progress is being made at maintaining zero density of buddleia at known riverbed sites. Again, large numbers of seedlings were recorded and controlled in the lower Twizel River site but few mature plants were seen. Scattered plants were also removed from the lower Ohau River.

PRR does not actively remove buddleia from the Twizel and Tekapo townships where they are common ornamental plants. We do explain the problems they can cause in river systems and encourage residents to replace buddleia with other less invasive plants.

## **Objective 2: Explore opportunities to enhance wetland conservation**

The constructed Ruataniwha wetlands and Waterwheel wetlands continue to provide habitat for a range of native fauna and flora. PRR continues to manage these wetlands by manipulating water levels, controlling weeds, and maintaining fences. No further wetland construction is planned; future wetland conservation efforts will concentrate on protecting existing wetlands.

### **Objective 3: Continue to build knowledge of natural heritage in braided-river ecosystems**

#### ***Freshwater fish***

Three permanent monitoring sites for upland longjaw (*Galaxias prognathus*) were re-measured in the Tasman and Hopkins rivers. Upland longjaw are a native fish occupying shallow braided rivers in the upper valleys of the eastern South Island. Populations are thought to be declining over time, so these monitoring sites have been established to provide a baseline from which population trends can be quantified and further population-ecology work undertaken.

#### ***Black-fronted terns***

Low levels of breeding success in black-fronted tern colonies have been of concern for some time. This year PRR again used regular casual observations to monitor nest outcomes at black-fronted tern colonies on islands in the upper Ohau and lower Tekapo rivers and at Ruataniwha wetlands.

More than 240 adults were present in the Ohau island colony at its peak. At least three different sub-adults were seen. Nest success was highest at this colony, with at least 55% of the 154 monitored nests successfully hatching chicks or reaching full incubation term and only 8% of the nests confirmed as failing prior to hatching. Despite the encouraging hatching rate, none of the chicks fledged.

Seventy adults were observed at the Tekapo island colony at its peak. Only one sub-adult was seen on any visit. Of the 70 monitored nests, only 20% successfully hatched chicks or reached full incubation term whereas 66% of the nests failed prior to hatching. None of the chicks fledged.

A maximum of 24 adults was observed at the Ruataniwha wetlands colony. At least five different sub-adults were seen. Only nine nests were produced and all failed early in incubation (Anderson et al., 2008).

#### ***Riverbed bird surveys***

Walk-through counts of riverbed birds have been used for many years in New Zealand to record numbers of birds present in different river systems. A regular cycle of repeated surveys can be useful to enable population trends of threatened, as well as more common species, to be monitored on a long-term basis.

Project River Recovery completed surveys of all the upper Waitaki rivers over three consecutive years in the early 1990s. Our intention is to repeat these surveys over three consecutive

years for each river system on a rotational basis, to make a direct comparison with the 1990s counts. Counts started this season in the Tekapo and Ohau rivers.

Wetland birds were counted along the upper Ohau River between Lake Ohau and Lake Ruataniwha, the lower Ohau River between Lake Ruataniwha and Lake Benmore and in the Tekapo River between the Tekapo control gates and Lake Benmore in November 2008.

A total of 154 wetland birds (10 species) was recorded in the upper Ohau River, 239 wetland birds (18 species) in the lower Ohau River and 1498 wetland birds (21 species) in the Tekapo River.

Comparisons with bird counts from the same river sections in 1991-1994 will be formally analysed once all three years of observations are completed (2008-2010). Initial indications for this year are that numbers of banded dotterels/turiwhatu and wrybills/ngutu pare were low in both the Ohau and Tekapo rivers. The number of black-fronted terns/tarāpirohe in the lower Ohau River was low, although the number of colonies was within the range previously recorded. The number of black-billed gulls/karoro in the Tekapo River was low and there were no colonies in either river system. The number of southern black-backed gulls in the Tekapo River was also low, as was the number of colonies (Anderson and Woolmore, 2009)

#### **Objective 4: Test the effectiveness of large-scale predator control.**

##### ***Tasman River***

As a step toward developing effective predator control, PRR and the Kakī Recovery Project are jointly undertaking a large-scale, extensive predator-control project in the Tasman valley. The project goal is to reduce predation of river birds to a level where depleted populations are recovering and large populations are in a stable state. The project takes a catchment-based approach, using a wide variety of control methods that are applied continuously throughout the year. Success of the project will be assessed on achieving target increases in fledging success and population growth for a range of river birds over a five-year time frame.

This was the fifth season of operation. A total of 305 Fenn, 342 DOC250, 263 Conibear traps, 76 cages and 425 Victor leg-hold traps are in place. Over the year these traps caught 741 hedgehogs, 396 stoats, 65 ferrets, 197 cats, 52 possums, 18 weasels and 9 rats.

Hatching and fledging success of wading birds was monitored in the Tasman and Cass rivers. The Cass River has no predator control in place and monitoring was established to provide a direct comparison with Tasman River results. In the Tasman, birds generally maintained similar levels to last year but wrybill fledging success decreased slightly. At least one more year of data will be collected before the success or otherwise of the operation is evaluated (Cleland et al., 2008). Results are summarized in Tables 2 and 3.

### ***Obau River***

Early indications from the catchment-scale trapping in the Tasman River are that while some wading birds are benefiting, black fronted tern breeding success remains poor. Previous attempts at localised trapping to protect black-fronted tern breeding colonies in other rivers have also been unconvincing. PRR is currently putting together a 'best-effort' proposal for intensive predator control to protect a black-fronted tern colony. The aim of this proposal is to combine all current best practice for control of predators and apply the full range of techniques at the greatest practicable scale. A proposal for this work has been written and peer reviewed and it is expected that a trapping programme will be put in place next year.

TABLE 2 HATCHING AND FLEDGING SUCCESS OF BANDED DOTTEREL, BLACK-FRONTED TERN AND WRYBILL FROM 2004-2008 IN THE TASMAN RIVER.

	HATCHING SUCCESS %			FLEDGING SUCCESS %		
	BANDED DOTTEREL	BLACK-FRONTED TERN	WRYBILL	BANDED DOTTEREL	BLACK-FRONTED TERN	WRYBILL
2004/05	95	4	100	15-41	0	13
2005/06	71	71	100	NA	27	56-67
2006/07	97	24	89	NA	0	53-89
2007/08	91	39	85	NA	23	54-73
2008/09	94	30	86	NA	13	21-57

TABLE 3 HATCHING AND FLEDGING SUCCESS OF BANDED DOTTEREL, BLACK-FRONTED TERN AND WRYBILL FROM 2004-2008 IN THE CASS RIVER.

	HATCHING SUCCESS %			FLEDGING SUCCESS %		
	BANDED DOTTEREL	BLACK-FRONTED TERN	WRYBILL	BANDED DOTTEREL	BLACK-FRONTED TERN	WRYBILL
2008/09	44	27	80	NA	6	20-70

**Objective 5: Facilitate research by external agencies to improve our understanding of the ecology of braided-river systems.**

There are no new initiatives to report against this objective.

**Objective 6: Continue to increase public awareness of braided rivers and wetlands**

Project River Recovery's work on braided-river conservation has been adopted by many South Canterbury and North Otago schools as part of their Year 6 NCEA curriculum. PRR staff continue to deliver a PowerPoint presentation to schools in support of the braided-river teacher resource. PRR has also provided detailed written resources to assist students with their work.

In addition to talks to the public, PRR met with various stakeholders including the PRR Liaison Group, the Tekapo/Pukaki/Ohau Operational Agreement working group, Fish and Game, ECan, and various private landholders.

This year a number of information sources were updated and reprinted, including the Braided River Care Code, Conservation of Braided River Birds pamphlet and the Braided River Field Guide. These resources continue to be distributed to schools, businesses and other community groups with the braided-river multi-species poster and braided-river field guide still proving to be popular.

**PROJECT RIVER RECOVERY'S FINANCIAL STATEMENTS 1 JULY 2008 - 30  
JUNE 2009**

**2008/2009 Financial Year**

Project River Recovery spent \$557,606 in the 2008/2009 financial year (\$428,000 in 2007/2008). PRR's revenue and expenditure for the 2008/09 financial year are itemised below. PRR Trust Account had a balance of \$127,546.73 at the end of the 2008/09 financial year.

	2009	2008	2007	2006	2005	2004	2003	2002
	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)
<b>REVENUE</b>								
ECNZ transfer from revenue in advance	555	425	437	428	556	416	545	260
Other revenue	0	0	0	0	12	1	1	0
<b>TOTAL REVENUE</b>	<b>555</b>	<b>425</b>	<b>437</b>	<b>428</b>	<b>568</b>	<b>417</b>	<b>546</b>	<b>260</b>
<b>EXPENDITURE</b>								
<b>Personnel costs</b>								
Salaries	118	172	108	109	68	98	106	67
Wages	13	4	1	4	1	9	23	30
Other personnel	3	1	1	0	7	2	1	9
<b>Total personnel costs</b>	<b>134</b>	<b>177</b>	<b>110</b>	<b>113</b>	<b>76</b>	<b>109</b>	<b>130</b>	<b>106</b>
<b>Administration costs</b>								
Communications/EDP	1	1	0	2	1	0	5	0
Accommodation	25	25	25	25	25	25	18	18
Office costs	1	2	0	0	0	1	1	1
<b>Total administration costs</b>	<b>27</b>	<b>28</b>	<b>25</b>	<b>27</b>	<b>26</b>	<b>26</b>	<b>24</b>	<b>19</b>
<b>Operating costs</b>								
Professional fees	15	12	23	6	7	152	100	20

Travel	5	1	1	2	4	1	3	3
Vehicle expenses	37	17	12	14	13	11	15	11
Field operations	335	190	257	261	436	106	266	95
Information and publicity	5	1	2	3	2	7	8	6
Grants and miscellaneous	0	2	6	2	4	7	1	0
Total operating costs	397	223	301	288	466	284	393	135
TOTAL EXPENDITURE	558	428	437	428	568	419	547	260
NET SURPLUS (DEFICIT)	-3	-3	0	0	0	-2	-1	0

NOTE: PROJECT RIVER RECOVERY CAN BE DIVIDED INTO SIX CORE TASKS. EXPENDITURE OVER THE 2008/09 FINANCIAL YEAR ASSOCIATED WITH EACH TASK WAS:

TASK	EXPENDITURE (\$)	(%) OF EXPENDITURE	% - 2007/08
001 Project management	146,747	26.3	33.4
002 Weed control	323,972	58.1	47.5
004 Research and monitoring	18,250	3.3	3.9
003 Wetland enhancement	156	0	0.5
006 Advocacy	9,432	1.7	0.2
005 Fence maintenance	0	0	0
007 Predator control	59,049	10.6	14.5
TOTAL	557,606	100.0	100.0

PROJECT RIVER RECOVERY STATEMENT OF FINANCIAL POSITION AS AT  
30 JUNE 2009

	2008/09	2008/09
Opening balance 1 July 2008	\$ 75,827.62	
Plus invoices to Meridian	350,682.00	
Add funds transferred from DOC on account previous year's invoices	112,398.22	
Total funds transferred to Westpac Trust account during 2008/09	463,080.22	
Less transfer to operating from trust account	-531,845.00	
Plus interest on trust account	3,589.89	
ACTUAL CLOSING BALANCE IN WESTPAC TRUST A/C - 30 June 2009	10,652.73	
Revenue treated as advance and retained in the departmental account (Transferred to the trust account in July 09)	116,894.00	
Funds available as at 30 June 2009	127,546.73	

MDS TRUST ACCOUNT

Reconciliation of funds transferred from the trust account to the department (operating *) as revenue during the year	\$	
Transfers to PRR Operating	531,845	
Revenue accrued - previous year, funded by the department	-19,561	
Revenue (cash basis) relevant to current year	512,284	
Revenue in advance during the current year	42,522	
Total revenue recognised during the year as per the Statement of Financial Performance	554,806	

## REFERENCES

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