

Flood Protection Asset Management 2014/15

Supplementary Information

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1. Introduction

This report has been produced to elaborate on the information contained in Report 2015.460 (document #1521464) on asset management activities within the Flood Protection Department for 2014/15. The report summarises:

- The condition rating data and graphs for individual river schemes and asset types;
- River Scheme Advisory Committee and Friends' Group Resolutions;
- Environmental best practice in the Eastern schemes; and
- The scheme reserves, scheme rate changes and the annual works programme budgets.

2. Asset condition

The annual asset condition assessment process involves grading each individual asset from 1 to 5. An asset graded 1 is in very good condition, while an asset graded 5 is in poor condition and requires upgrade, replacement or should be written off.

The annual process of systematically visiting and assessing asset condition is a fundamental part of our overall asset management system and is continually being improved. Management inspections also provide robustness to this process. When asset criticality is overlaid, this allows maintenance to be prioritised and ensures that Council is maintaining its critical assets.

As part of the Asset Management Improvement Plan, asset criticality will be specifically assigned in the coming years to each asset within SAP, which will provide additional visibility into the asset base performance.

This year, significant progress will be made in capturing amenity assets (structures, furniture and plantings) into SAP Plant Maintenance and then managing these assets along with the rest of the asset base.

Overall, 90% of the assets are in a good or moderate condition (rated 1 to 3). In this context, good or moderate condition means that there is only general wear or tear with only minor or moderate maintenance required. The majority of the remaining 10% that are in poor condition (4 or 5) are mainly low level erosion protection or vegetative structures. **Table 1** has this breakdown.

The exception to this is the Barrage Gates, which received two ratings this year. One was for the superstructure, which was rated a 2. The other was for the electro-mechanical components and these were rated as 4 due to the need to overhaul the electrical control system. A major refurbishment programme is currently at the tender phase and works are expected to begin this summer.

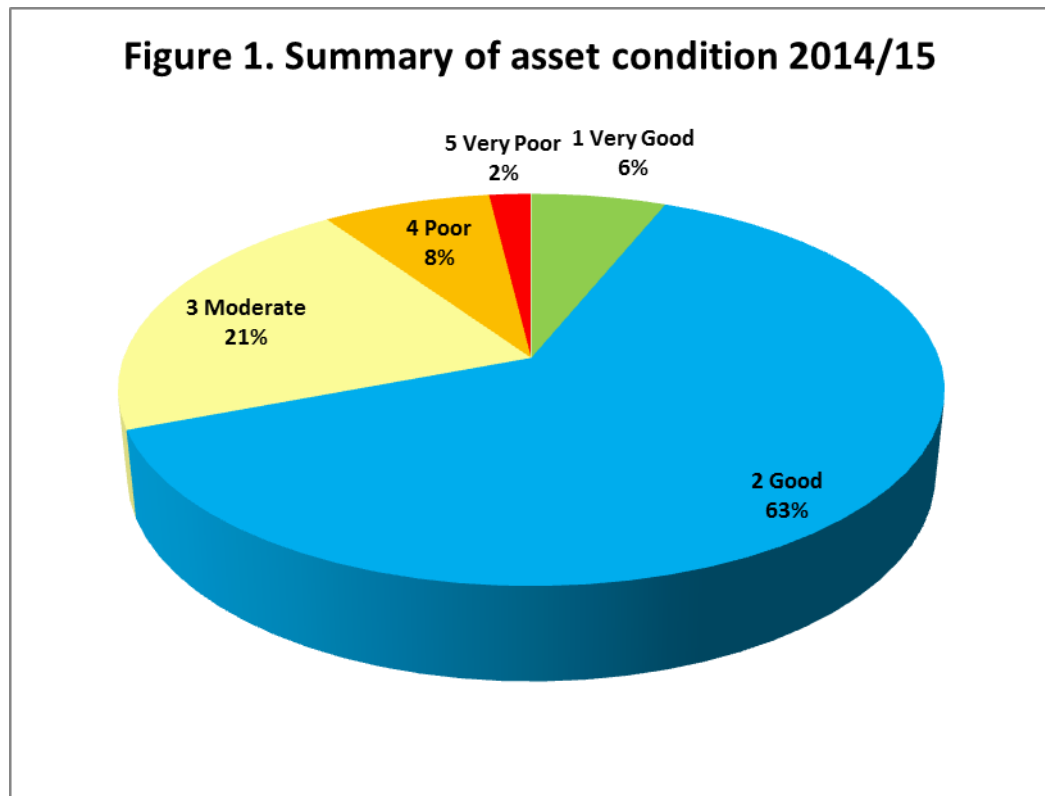
Other significant structures of note are the two Porirua Detention Dams. In June 2015 a Comprehensive Safety Review (CSR) was completed by Damwatch for both these structures. In this review, no significant structural or

performance issues were noted. Over the coming year, actions from the CSR relating to improved asset management processes for these dams will be implemented.

The condition rating process is one snapshot at a particular time and hence this report it is only an indication of the general asset base. Floods in May and June 2015 altered the condition of a number of the assets and while the critical damage was repaired immediately, some repair work is now scheduled in the work programme. A summary of condition by asset type is shown in **Table 1**.

Table 1: Condition Rating by Asset Type 2014/15						
Asset Type	1 Very Good	2 Good	3 Moderate	4 Poor	5 Very Poor	Grand Total
Barrage Gate		1		1		2
Blockline		9	19	4		32
Bridge	1	2				3
Culvert	11	29	6	5		51
Debris Arrestor	2	9	2			13
Debris Fence	3	190	187	50	47	477
Demolition Line		5	13	5		23
Detention Dam		2				2
Diversion Cut		2				2
Drop Structure	1	1				2
Ducksbill Structure		2				2
Fascine			2			2
Fence	4	45	4		1	54
Fence Rail Iron Net		12	1	4	3	20
Floodgate	15	86	27	15	2	145
Floodwall	27	1				28
Floodway Sill		2				2
Groyne	22	1030	98	20	16	1186
Riprap	21	209	44	8	6	288
Stopbank	99	499	156	107	2	863
Track	128	367	112	9	3	619
Training Bank		10	2			12
Weir		15	2			17
Willow	4	589	297	172	26	1088
Wingwall	2	9	1			12
Grand Total	340	3126	973	400	106	4945
% of Total	6.8%	63.2%	19.7%	8.0%	2.1%	

A summary of the asset condition is shown in **Figure 1**.



90% of assets achieved a 3 or above standard, where no or moderate maintenance is required.

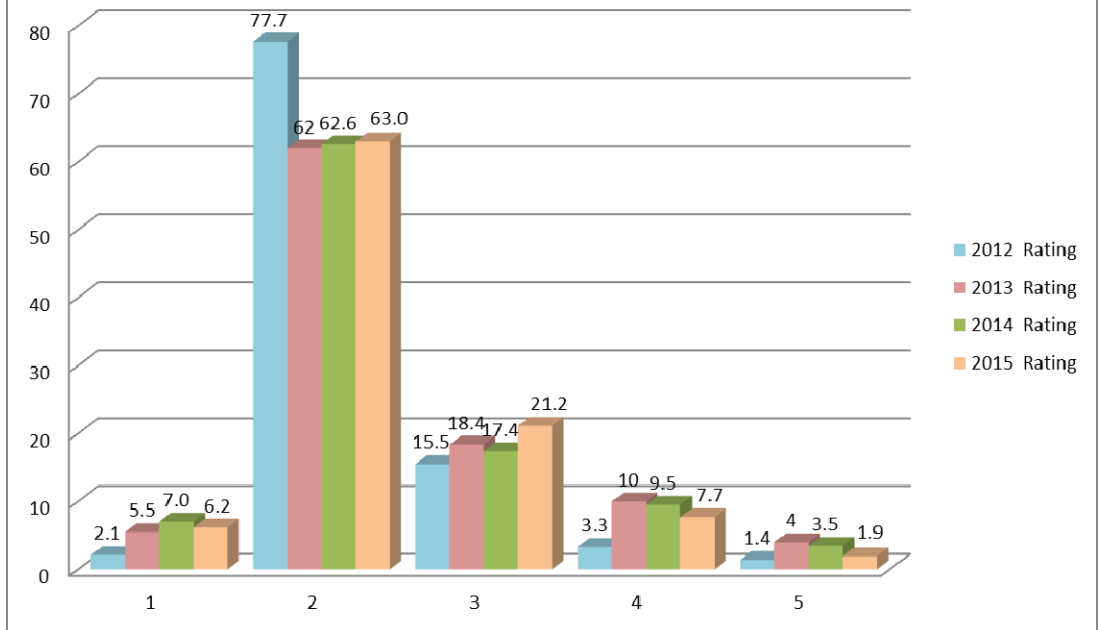
8 % of assets achieved a rating of 4. The majority of these assets are non-critical assets such as debris fences and willows that are nearing the end of their useful life. The stopbanks that fall into this category are located on the northern Wairarapa and Otaki Rivers. These stopbanks do not meet current standards and either have excessive vegetation growth or have been poorly constructed. In all instance the stopbanks have been identified and will be resolved either through the implementation of floodplain management plans (FMP) for the Wairarapa or the existing Otaki FMP.

The flood gates assessed as rating 4 have been identified in works programmes.

3% of assets achieved a rating of 5. These assets are programmed for future work, or will be written off, as they are no longer required. The critical assets in this category are stopbanks in the Wairarapa and will be addressed through the floodplain management planning process.

A comparison of asset condition for the last four years is shown in **Figure 2** below. The noticeable change in asset condition from 2012 to 2013 was a result of improvements in assessment techniques and not a change in the physical asset condition. Overall, asset condition is improving however there are still elements of the condition rating process that can be improved to increase the level of reliability and confidence in the assessment.

Figure 2. Asset Condition from 2012 to 2015



The following tables and graphs summarise the range of assets and their condition ratings across our river schemes. Also included is data on critical assets such as stop banks and floodgates and how these profile across the schemes as a percentage of the total asset base.

Table 2: Condition Rating by Scheme 2014/15						
River Scheme	1 Very Good	2 Good	3 Moderate	4 Poor	5 Very Poor	Grand Total
Hutt River	288	893	223	67	74	1545
Lower Wairarapa Valley Development Scheme	4	808	145	18	4	979
Minor Watercourses			1			1
Otaki River		144	341	188		673
Porirua Stream	14	35		1		50
Ruamahanga Gladstone		162	2	8		172
Ruamahanga Mt Bruce	1	93	35	9		138
Ruamahanga Te Ore Ore	3	176	17	1	1	198
Waikanae River		26	120	58	5	209
Waimeha Stream			1			1
Waingawa		101	8	3	17	129
Wainuiomata River	8	28	28	15	4	83
Waiohine	1	460	18	9	1	489
Waipoua	5	189	34	23		251
Water Course Agreement	16	11				27
Grand Total	340	3126	973	400	105	4945

Analysis of **Table 2** above and **Figure 3** below indicate that for the schemes with the highest count of assets, their condition was good or very good.

The Otaki scheme does have a high number of moderate rated assets, however, this is primarily due to the quality of the vegetation growth over functioning assets where performance is not effected.

Figure 3. Count of Condition by Scheme

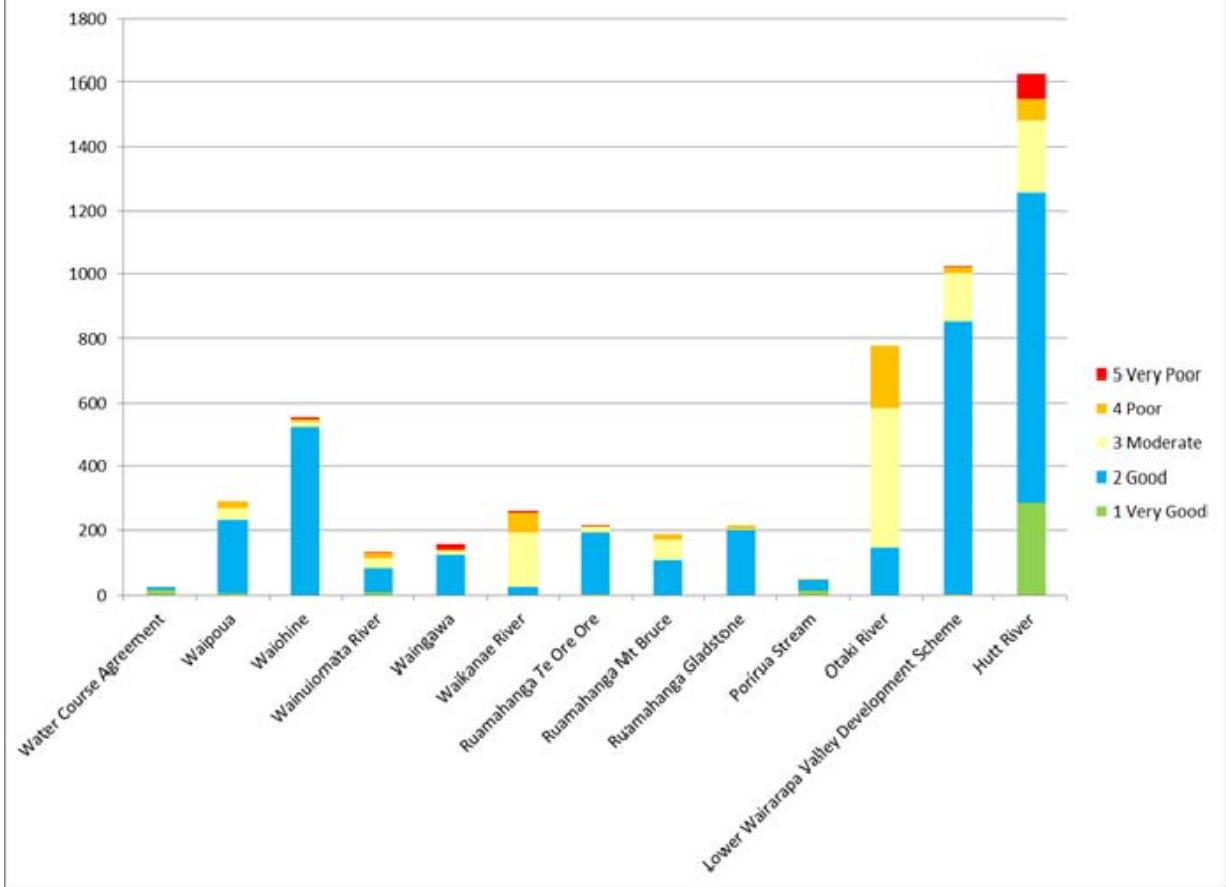


Table 3: Floodgate/Stopbank Condition Rating by Scheme 2014/15						
Critical Assets by Schemes	1 Very Good	2 Good	3 Moderate	4 Poor	5 Very Poor	Totals
Floodgate						
Hutt River	7	7				14
Lower Wairarapa Valley Development Scheme	4	69	22	15	2	112
Otaki River		7	2			9
Waikanae River		2	3			5
Wainuiomata River	4	1				5
Floodgate Total	15	86	27	15	2	145
Stopbank						
Hutt River	96	142	5			243
Lower Wairarapa Valley Development Scheme		228	108		2	338
Otaki River		35	18	60		113
Porirua Stream		8				8
Ruamahanga Gladstone		5		7		12
Ruamahanga Mt Bruce			3	4		7
Ruamahanga Te Ore Ore	3	1		1		5
Waikanae River		4	4	8		16
Waingawa		3	4	1		8
Wainuiomata River		14				14
Waiohine		49	5	8		62
Waipoua		10	9	18		37
Stopbank Total	99	499	156	107	2	863
Grand Total	114	585	183	122	4	1008

Analysis of **Table 3** above indicate that for assets types that are generally designated critical, only 4 assets are rated as 5. These assets have either been repaired or have been specifically identified as having a non-critical function in the river scheme.

For the floodgates rated 'Poor', all have either been repaired or are scheduled for a work programme.

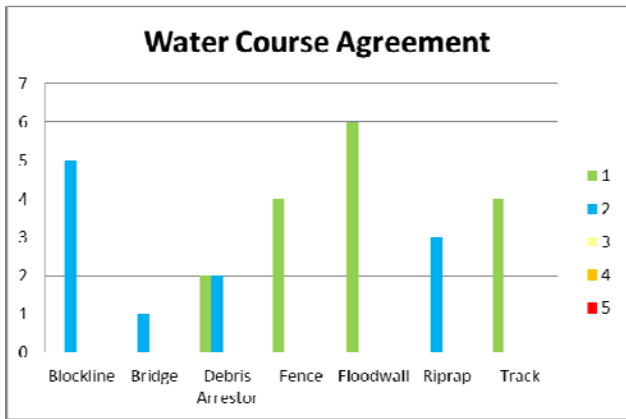
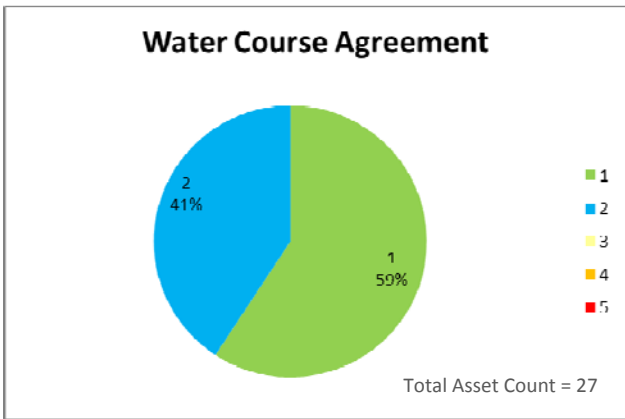
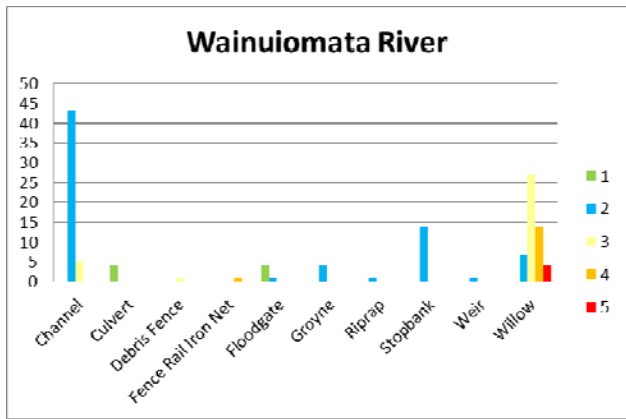
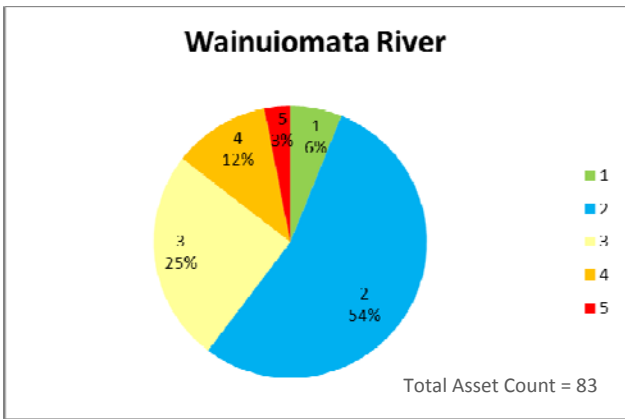
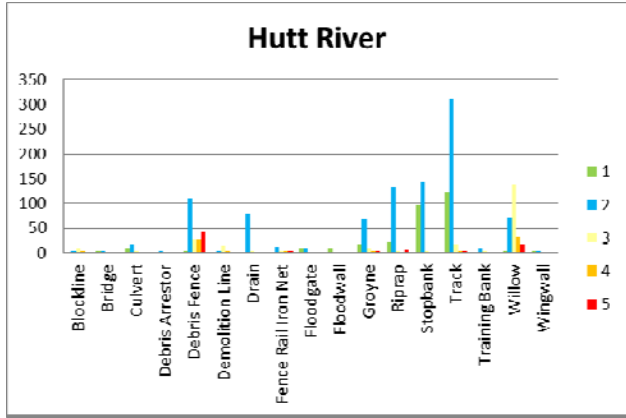
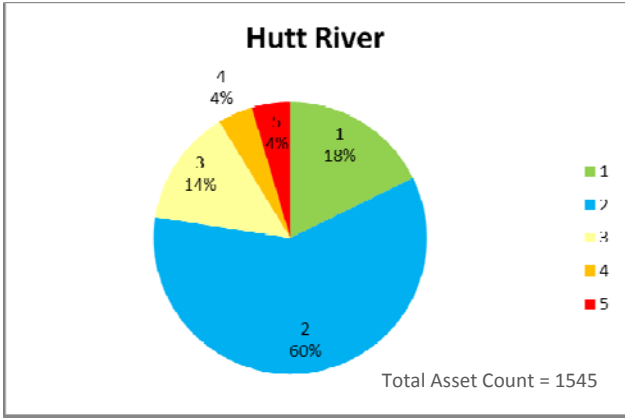
For the stopbanks rated 'Poor', a significant number are functional but covered in so much vegetation that proper appraisal is not possible. Others

have been given this rating due to the need for minor repair and scheduled for the work programme.

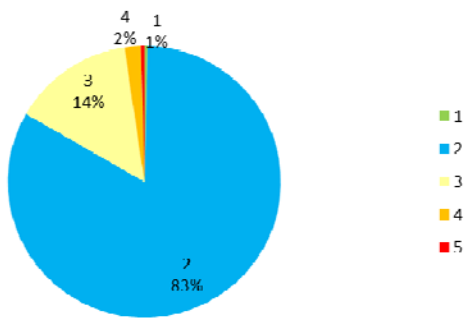
As the asset management assessment process develops further we will also rate asset criticality for flood protection assets to confirm asset performance and prioritise investment decisions.

Figure 4: Total condition by scheme & Condition per asset type by scheme



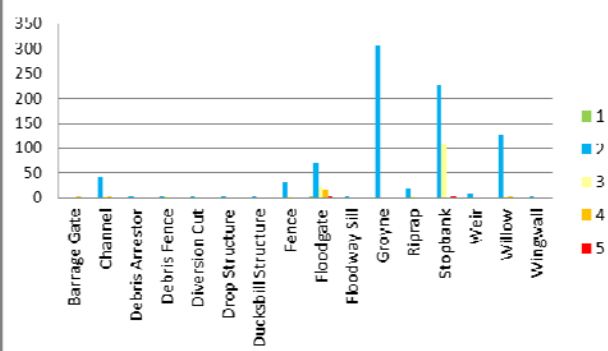


Lower Wairarapa Valley

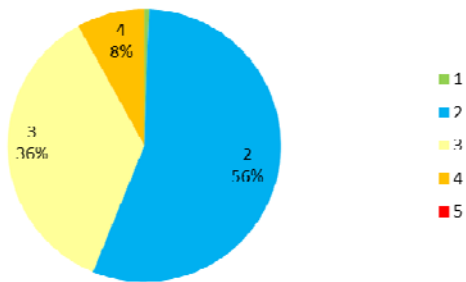


Total Asset Count = 979

Lower Wairarapa Valley

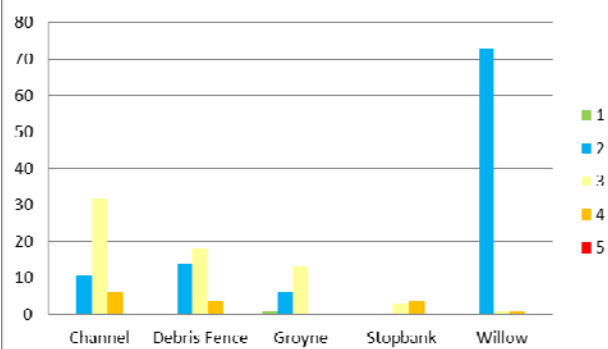


Ruamahanga Mt Bruce

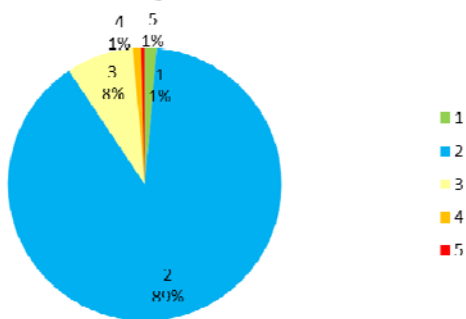


Total Asset Count = 138

Ruamahanga Mt Bruce

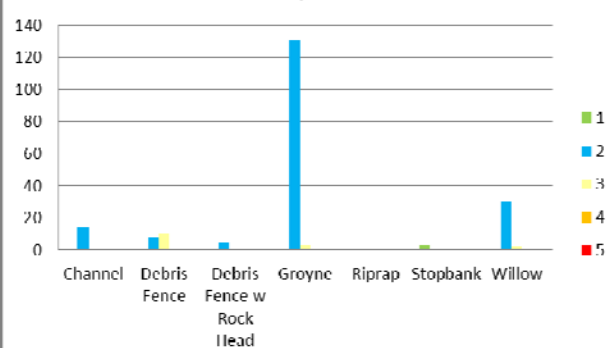


Ruamahanga Te Ore Ore

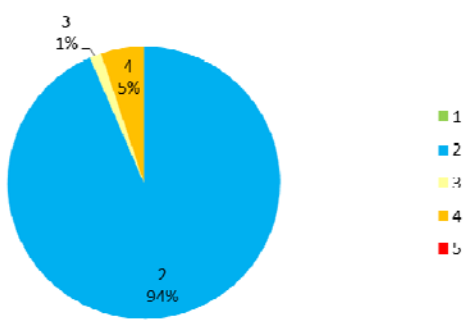


Total Asset Count = 198

Ruamahanga Te Ore Ore

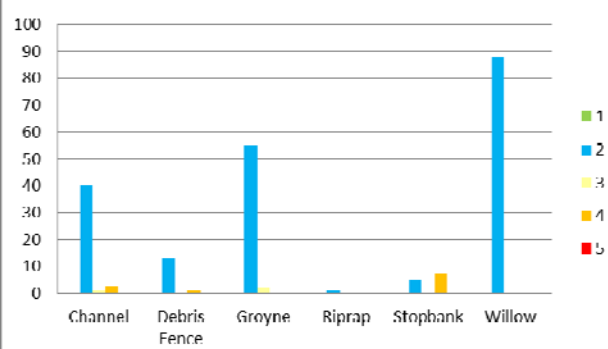


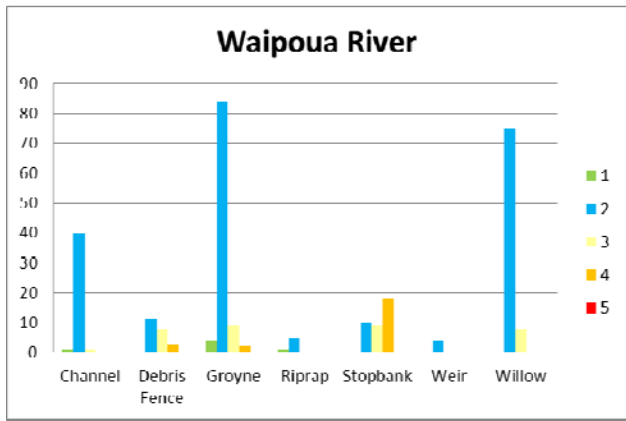
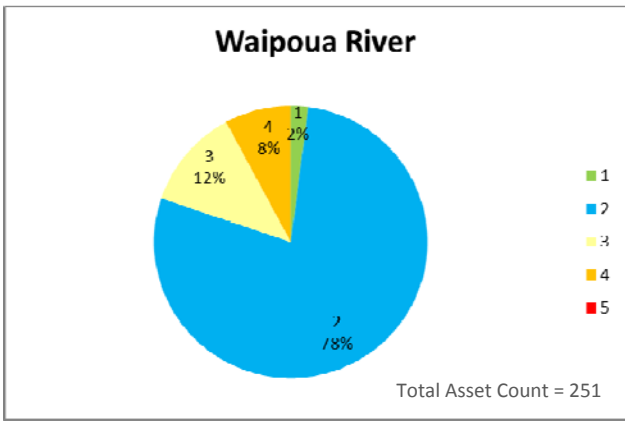
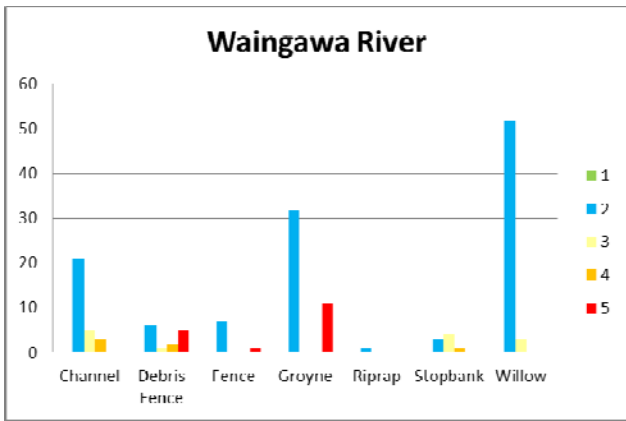
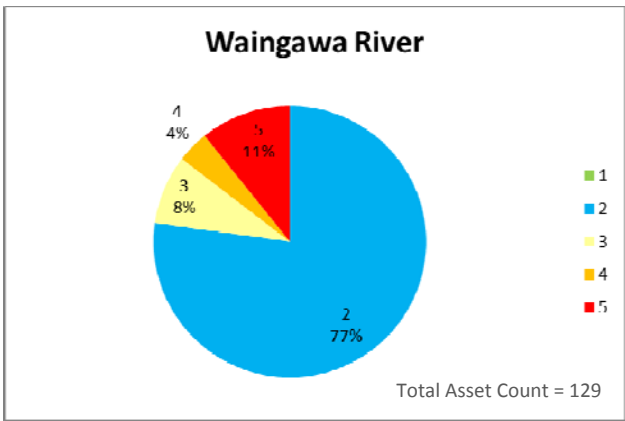
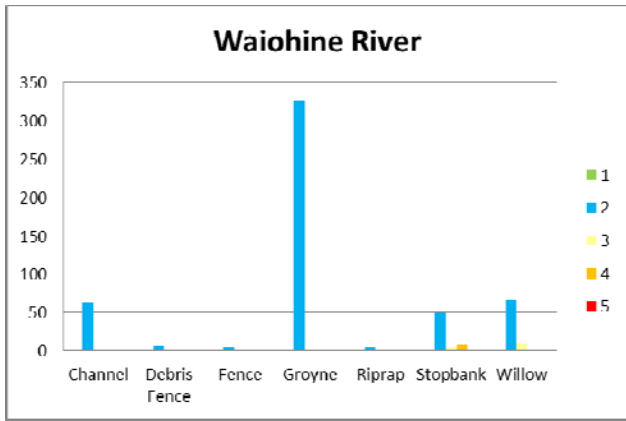
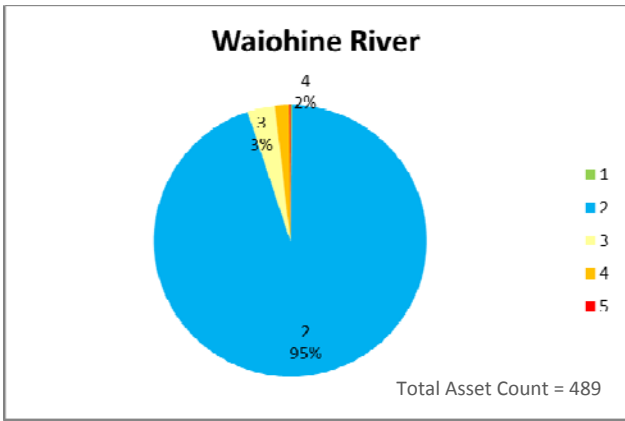
Ruamahanga Gladstone



Total Asset Count = 172

Ruamahanga Gladstone





3.

Wairarapa Scheme Advisory Committee resolutions

Table 4 details the Scheme resolutions passed at the various Wairarapa Scheme Advisory Committees held in 2014/15.

Scheme	Resolution
<p>Lower Wairarapa Valley Development Scheme (LWVDS) Advisory Committee</p>	<p>That the Lower Wairarapa Valley Development Scheme Advisory Committee confirms that:</p> <ol style="list-style-type: none"> 1. Scheme Annual Report and Financial Statement be accepted 2. Lower Wairarapa Valley Development Scheme assets have been maintained to the satisfaction of the Committee. <p>M Lovett / B Jephson</p> <p>That the Lower Wairarapa Valley Development Scheme Advisory Committee recommends to the Strategy and Policy Committee that:</p> <ol style="list-style-type: none"> 1. Proposed 2015/16 works programme be adopted at an estimated cost of \$1,805,525; 2. Scheme rates for the year 2015/16 be increased by 5%; 3. Scheme raises a loan of \$805,075 through the council to fund the 2015/16 financial year development works programme. <p>M Lovett / B Jephson</p>
<p>Waiohine River Floodplain Management Planning Advisory Committee</p>	<p>That the Waiohine River Flood Plain Management Advisory Committee confirms that:</p> <ol style="list-style-type: none"> 1. The Scheme Annual Report and Financial Statement are accepted J Bicknell / M Slater - Carried 2. The Waiohine River scheme has been maintained to the satisfaction of the Committee Bruce Slater / J Bicknell – Carried <p>That the Waiohine River Flood Plain Management Advisory Committee recommends to the Strategy & Policy Committee that:</p> <ol style="list-style-type: none"> 3. The Proposed 2015/2016 works programme be approved at an estimated cost of \$375,000. 4. The Scheme rates for the year 2015/2016 are increased by 2% B Slater / M Ashby - Carried

<p>Waingawa River Advisory Committee</p>	<p>That the Waingawa River Management Advisory Committee confirms that the:</p> <ol style="list-style-type: none"> 1. Scheme Annual Report and Financial Statement are accepted. 2. River scheme has been maintained to the satisfaction of the committee. <p style="text-align: center;">B Donaldson / G McPhee - Carried</p> <p>That the Waingawa River Management Advisory Committee recommends to the Strategy & Policy Committee that the:</p> <ol style="list-style-type: none"> 1. Proposed 2015/16 works programme be approved at an estimated cost of \$185,000. <p style="text-align: center;">R Sherry / B Donaldson - Carried</p> <ol style="list-style-type: none"> 2. Scheme rates for the year 2015/16 are increased by 4%. <p style="text-align: center;">R Cottle / M Palmers - Carried</p>
<p>Upper Ruamahanga River - Mt Bruce Advisory Committee</p>	<p>That the Mt Bruce River Management Advisory Committee confirms that the:</p> <ol style="list-style-type: none"> 1. Scheme Annual Report and Financial Statement are accepted. 2. River Scheme has been maintained to the satisfaction of the committee. <p style="text-align: center;">G Churcher / Mike Wyeth</p> <p>That the Mt Bruce River Management Advisory Committee recommends to the Strategy and Policy Committee that the:</p> <ol style="list-style-type: none"> 3. Proposed 2015/16 works programme be approved at an estimated cost of \$116,500. 4. Scheme rates for the year 2015/16 are increased by 4%. <p style="text-align: center;">G Churcher / Mike Wyeth</p>
<p>Upper Ruamahanga River Te Ore Ore Advisory Committee</p>	<p>That the Te Ore River Management Advisory Committee confirms that the:</p> <ol style="list-style-type: none"> 1. Scheme Annual Report and Financial Statement are accepted. 2. River Scheme has been maintained to the satisfaction of the committee. <p style="text-align: center;">E Oliver / J Percy</p> <p>That the Te Ore Ore River Management Advisory Committee recommends to the Strategy and Policy Committee that the:</p> <ol style="list-style-type: none"> 3. Proposed 2015/16 works programme be approved at an estimated cost of \$155,000.

	<p>4. Scheme rates for the year 2015/16 are increased by 4%. S Blakemore / J Percy</p>
<p>Upper Ruamahanga River Gladstone Advisory Committee</p>	<p>C. That the Gladstone River Management Advisory Committee confirms that the:</p> <ol style="list-style-type: none"> 1. Scheme Annual Report and Financial Statement are accepted. 2. River Scheme has been maintained to the satisfaction of the committee. M Williams / R Ashby <p>That the Gladstone River Management Advisory Committee recommends to the Strategy and Policy Committee that the:</p> <ol style="list-style-type: none"> 3. Proposed 2015/16 works programme be approved at an estimated cost of \$160,000. 4. Scheme rates for the year 2015/16 are increased by 4%. B Patrick / G McGregor
<p>Waipoua River Advisory Committee</p>	<p>That the Waipoua River Management Advisory Committee confirms that the:</p> <ol style="list-style-type: none"> 1. Scheme Annual Report and Financial Statement are accepted, and 2. Waipoua River scheme has been maintained to the satisfaction of the Committee Tom Wyeth / B Donaldson <p>That the Waipoua River Management Advisory Committee recommends to the Strategy & Policy Committee that the:</p> <ol style="list-style-type: none"> 1. Proposed 2015/2016 works programme be approved at an estimated cost of \$122,500, and 2. Scheme rates for the year 2015/2016 are increased by 4%. Tom Wyeth / Mick Holmes

<p>Taueru and Whangaehu Advisory Committees</p>	<p>That the Whangaehu River Management Advisory Committee confirms that the:</p> <ol style="list-style-type: none"> 1. Scheme Annual Report and Financial Statement are accepted. 2. Whangaehu River Scheme has been maintained to the satisfaction of the committee. <p style="text-align: center;">W Tocker / L Griffiths</p> <p>And the Whangaehu River Management Advisory Committee recommends to the Strategy and Policy Committee that the:</p> <ol style="list-style-type: none"> 3. Proposed 2015/16 works programme be approved at an estimated cost of \$7,000. 4. Scheme rates for the year 2015/16 are increased by 4%. <p style="text-align: center;">L Griffiths / W Tocker</p> <p>That the Taueru River Management Advisory Committee confirms that the</p> <ol style="list-style-type: none"> 1. Scheme Annual Report and Financial Statement are accepted. 2. Taueru River Scheme has been maintained to the satisfaction of the committee. <p style="text-align: center;">H Buchanan / B Patrick</p> <p>And the Taueru River Management Advisory Committee recommends to the Strategy and Policy Committee that the:</p> <ol style="list-style-type: none"> 3. Proposed 2015/16 works programme be approved at an estimated cost of \$5,500. 4. Scheme rates for the year 2015/16 are increased by 4%. <p style="text-align: center;">B Patrick / H Buchanan</p>
<p>Kopuaranga River Advisory Committee</p>	<p>A. That the Kopuaranga River Management Advisory Committee confirms that the:</p> <ol style="list-style-type: none"> 1. Scheme Annual Report and Financial Statement are accepted. 2. Kopuaranga River Scheme has been maintained to the satisfaction of the committee. <p style="text-align: center;">R McKenzie / John Percy</p> <p>And the Kopuaranga River Management Advisory Committee recommends to the Strategy & Policy Committee that the:</p> <ol style="list-style-type: none"> 3. Proposed 2015/16 works programme be approved at an estimated

	<p>cost of \$25,000.</p> <p>4. Scheme rates for the year 2015/16 are increased by 85%. H Dickens / N Cameron</p>
Friends of the Otaki River	<p>The 2015 AGM meeting is to be held in 28 October 2015 and hence the last resolution from the Friends of the Otaki River is included below.</p> <p>Resolution from last year: 29 October 2014</p> <p>Resolved: ‘That Friends of the Otaki River confirm that the reach of the Otaki River actively managed by Greater Wellington Regional Council Flood Protection Department has been maintained to the satisfaction of the FOTOR in the past year’ <i>Moved K Nauta/B Mansell</i></p> <p>Resolved: ‘FOTOR notes with concern the eroding north estuary river bank and asks for urgent remedial work to be planned and implemented’ <i>Moved E Matthews/A Jones</i></p>
Friends of the Waikanae River	<p>The Friends of the Waikanae River confirm that the reach of the Waikanae River between SH1 and the estuary actively managed by the Greater Wellington District Council Flood Protection department has been maintained to the satisfaction of the meeting”. (Was carried by the meeting)</p>

Table 4: Scheme and Friends’ resolutions

4. Consents and Environmental Best Practice (Northern Wairarapa Rivers)

In 2011 GWRC Flood Protection, Department of Conservation, Fish & Game, Forest & Bird, Kahungunu ki Wairarapa, and Rangitāne o Wairarapa produced the *Wairarapa River Management Agreement* which was aimed at ensuring an agreeable approach to river management in coming years (see [WGN_DOCS-#885313](#)). The key matters addressed by the *River Agreement* related to improving environmental best practice and organising a research and monitoring programme which would enable a greater understanding of environmental effects of river management.

The key projects that have progressed in 2014/2015 in relation to the *River Agreement* intent have been the development of the Code of Practice for Flood Protection Operations and the AEE, both of which are part of the replacement consent applications noted previously in this report.

4.1 River environment enhancement efforts

Recreational, habitat and cultural values, are an important consideration of the *River Agreement*. Below is a summary of a few of the accomplishments that the river schemes have achieved throughout the year.

Mangatarere Restoration Society:

The Waiohine/Mangatarere River scheme continued to support native planting projects associated with Mangatarere River restoration work.

Native planting:

Below is a brief summary of native planting support provided by various river schemes.

- Ruamahanga River, XS223, left bank. Gladstone scheme supplied 100 native plants to landowner.
- Waipoua River: 900+ native plants planted in September 2014 (in addition to 800 native plants planted in July 2013) for urban walkway reserve (near QEII Park) working with MDC on native planting programme.

5. Scheme reserves and 2015/16 budget

Table 5 details the financial position at 30 June 2015, rates increases and the estimated budget for 2015/16 works programmes.

Scheme	2014/15			2015/16	
	Scheme Reserve	Major Flood Investment Reserves	Total Reserves	Rate (%)	Estimated Works
Lower Valley	1,902,361	1,170,378	3,072,739	5	\$1,805,525
Waiohine	671,483	38,600	710,083	2	378,000
Mount Bruce	77,659	8,749	86,408	4	\$135,261
Te Ore Ore	271,290	8,749	280,039	4	\$161,965
Gladstone	69,770	8,749	78,519	4	\$181,974
Waingawa	120,246	25,735	145,980	4	\$196,050
Waipoua	144,499	25,735	170,234	4	\$123,990
Kopuaranga	-61,422		-61,422	85	\$33,450
Taueru	9,075		9,075	4	\$8,030
Whangaehu	10,364		10,364	4	\$7,510
Eastern River Total	3,215,325	1,286,694	4,502,018		\$3,031,755
Western Rivers Total	2,571,938	1,286,694	3,858,632		\$3,578,142
Sub Total of River Schemes Reserves	5,787,263	2,573,387	8,360,650		
GW Flood Contingency Reserve	1,503,184		1,503,184		
GW Major Flood Investment		2,573,388	2,573,388		
Total Reserves of River Schemes	7,290,447	5,146,775	12,437,222		6,609,897

Table 5: Scheme budget and reserves