

Environment Management Group

Performance Report ended 31 March 2015



1 TE UPOKO TAIAO NATURAL RESOURCE MANAGEMENT COMMITTEE

1.1 Environmental Policy



Overview

Te Upoko Taiao is considering recommended revisions to the Proposed Natural Resources Plan

The Ruamāhanga Whaitua Committee's work programme is continuing, with three workshops, one fieldtrip and several community engagement events held this quarter

Te Awarua o Porirua Whaitua Committee has begun its work programme with the inaugural committee meeting and a session around collaborative working

The department's implementation of the Regional Policy Statement is on-going

The Regional Hazard Management Review continues

Key results for the quarter

- ▶ Feedback on the draft Natural Resources Plan for the Wellington region has been summarised and placed on the web page
- ▶ Environmental Policy staff are working with stakeholders and individuals in the review and refinement of provisions set out in the draft Natural Resources Plan
- ▶ A number of public meetings around stock access were held
- ▶ Work is progressing on the implementation of the National Policy Statement for Freshwater Management with,
 - » the Ruamāhanga Whaitua Committee's programme of work underway
 - » the approval of the second whaitua committee: Te Awarua o Porirua Whaitua Committee

Looking ahead

- ▶ Te Upoko Taiao will continue to meet for workshops as they move towards approval of the Proposed Natural Resources Plan in June
- ▶ The Ruamāhanga Whaitua Committee will continue to progress its work
- ▶ Te Awarua o Porirua Whaitua Committee will continue to progress its work
- ▶ The Regional Hazard Management Strategy will continue its stock take of natural hazards and hazard management policies in the region

Departmental activity

The department is currently working on the following activities to support its programmes, including;

- ▶ Engagement on the draft Natural Resources Plan
- ▶ Supporting the Ruamāhanga Whaitua Committee
- ▶ Supporting Te Awarua o Porirua Whaitua Committee
- ▶ The development of a Regional Hazard Management Strategy, and
- ▶ The implementation of the Regional Policy Statement

Implementation of the NPS for Freshwater Management/Whaitua

Programme

Ruamāhanga Whaitua Committee

The Ruamāhanga Whaitua Committee is continuing its work programme, meeting approximately every six weeks at different locations around the whaitua (catchment).

2 February 2015

The Ruamāhanga Whaitua Committee held a workshop and meeting at the Masterton Town Hall on 2 February 2015. The workshop began with the committee completing a stock take of how well they were operating as a committee.

The committee then identified a number of gaps in their community engagement and noted events which each member could undertake to fill these gaps.

The second half of the meeting was open to the public. The committee first reviewed their draft outcomes and vision. Then a values exercise was completed where the community was invited to identify what they valued in the Ruamāhanga Whaitua. Participants separated into groups and considered a set of catchment maps, each representing an interim Freshwater Management Unit (FMU). The community noted on the maps how they were currently using land and water in that area, any uses of land/water they would like to be making but currently can't and what was important to them about freshwater in that interim FMU.

23 February 2015

This was a committee led workshop held at the Carterton Events Centre on 23 February 2015 with a focus on how the committee itself runs. Topics covered included how they were tracking, identifying future speakers and finalising a process for setting future agendas.

Presentations were made from two committee members, Aidan Bichan and Andy Duncan, on networking and on taking a holistic view of the Ruamāhanga Whaitua.

26 February 2015

The Ruamāhanga Whaitua Committee participated in a fieldtrip to the Bideford area to familiarise themselves with land and water management issues in the east coast hill country.

The committee then led a community engagement event in the Whangaehu Hall from 3-5pm following the fieldtrip. The community engaged on three questions. What was the area like in the past, what are the current issues and what did people want to see in the future?

16 March 2015

The Ruamāhanga Whaitua Committee held a workshop at St Andrew's Hall in Greytown on 16 March 2015. The workshop started with a presentation from Jamie Falloon from Federated Farmers on water quality in the Ruamāhanga Whaitua.

The committee members then reported back on community engagement activities they'd undertaken including attending the A&P show in Masterton on 21 February 2015. Feedback focused on key points the committee members spoke with the community about. The committee identified further community engagement opportunities.

The third section of the workshop focused on values, assessing those collected at the 2 February committee meeting in Masterton. The committee assessed whether the draft groupings and names were appropriate, they checked the extent to which the NPS-FW 2014 NOF compulsory values, non-compulsory values and the GWRC Draft Natural Resources Plan values were reflected, and identified any values around which they would like further information.

30 March 2015

The Ruamāhanga Whaitua Committee held a community engagement event at the Carterton Events Centre on Monday 30 March 2015. Members of the local community completed the same exercise that was completed in Masterton on 2 February where they identified what they valued in the Ruamāhanga Whaitua using catchment maps, each representing an interim Freshwater Management Unit.

Te Awarua o Porirua Whaitua Committee

Te Awarua o Porirua Whaitua Committee has begun its work programme, meeting approximately every six weeks at different locations around the whaitua (catchment).

18 February 2015

Te Awarua o Porirua Whaitua Committee held their inaugural meeting at Takapuwahia marae in Porirua on Wednesday 18 February 2015. The meeting started with introductions from the committee, project team and iwi members. A general discussion was held where the committee and iwi shared expectations for the process.

23 March 2015

Te Awarua o Porirua Whaitua Committee held a workshop on collaboration, led by Glen Lauder (Cultivate). This workshop was designed to help Te Awarua o Porirua Whaitua Committee complete effective collaborative work.

Operative Regional Policy Statement

Ongoing – work continues across a range of methods and to ensure the policies are given effect to in district and regional plans.

Regional Plan review

Te Upoko Taiao – Natural Resource Management Committee

10 February 2015

Te Upoko Taiao held a workshop at Greater Wellington Regional Council on 10 February 2014. A summary of comments submitted on the draft Natural Resources Plan was presented to the committee. The committee was also updated on work on stock access, identification of wetlands, the schedule 1 process, updates to the plan design and on the whitua process.

31 March 2015

On 31 March 2015 Te Upoko Taiao held a meeting where they considered the quarterly report from December 2014.

In the workshop following, Te Upoko Taiao considered recommended revisions to the direction of the Proposed Natural Resources Plan. A paper was presented to the committee highlighting key policy areas (those high risk or areas where the policy direction requires reassessment) and the recommended changes. Updates were presented on stock access, wetlands identification, section 32's and the whitua process. The committee also agreed a new design for the Proposed Natural Resources Plan.

Engagement

Public engagement following the draft Natural Resources Plan has involved, public meetings, stakeholder and individual conversations including providing people with a number of ways to deliver their feedback to us:

- ▶ The formation of the stock access working groups which met, three times in March
- ▶ Three public meetings addressing possible changes to the draft stock access provisions which were attended by approximately 250 people
- ▶ Meeting on the Kapiti Coast with the Rural Issues Group
- ▶ Numerous meetings with individual stakeholder groups, covering specific issues
- ▶ In response to the feedback on the draft Livestock Access provisions, three Focus Group meetings were held in February/March 2015. These meetings were followed by three well-attended Public Meetings in Carterton, Wainuiomata and Otaki in March.

Development of Proposed Plan and section 32 (Cost-Benefit) Reports

Recommended revisions to the direction for the Proposed Plan were presented to Te Upoko Taiao on 10 February and 31 March.

Regional Council input into Statutory Planning

District Plan Changes

Wellington City Council

- ▶ Proposed plan change 77 – Curtis Street Business Area

GWRC is an interested party (but not an appellant) to the appeals on this plan change on matters relating to biodiversity and stormwater management. The appeals are expected to be heard by the Environment Court later in April 2015. GWRC has indicated that it will not take active part in the appeals as an interested party only, but will be available to appear should the Court request it.

Porirua City Council

- ▶ Proposed plan change 16 – Network Utilities

GWRC has submitted on this proposed Plan Change 16. Our main reason for submitting was in respect of our flood protection infrastructure. The hearing was held on 17 September 2014. The Commissioners adjourned the hearing and Greater Wellington Regional Council has produced a report on the interpretation of 'Regionally significant infrastructure'. The hearing has now closed and GWRC is awaiting the decision.

- ▶ Proposed plan change 17 – Aotea Supermarket Zone

GWRC submitted on matters relating to public transport efficiency and stormwater management. Notice to grant the plan change was notified on 11 December 2014 and supported GWRC's submission. PCC has declared the plan change would be made operative on 8 April 2015.

Hutt City Council

- ▶ Plan Change 34 – Network Utilities and renewable energy generation

GWRC made a generally submission on Plan Change 34 which proposes to bring the district plan provisions for network utilities into line with the National Policy Statement on Electricity Transmission and the Wellington Regional Policy Statement. It also seeks to give effect to the National Policy Statement on Renewable Electricity Generation by introducing a new Chapter to the General Rules to provide for renewable energy generation. The key issues raised in the submission related to the operational requirements and needs of the GWRC Flood Protection department. They sought that some of the proposed policies be amended, and that new rules be added to lessen the risk of stopbank damage and breaches when transmission lines are being removed and upgraded or maintenance is required on them.

Upper Hutt City Council

- ▶ Private Plan Change 40 – Wallaceville

Upper Hutt City Council has released private Plan Change 40 – Wallaceville for public notification. This plan change seeks to rezone approximately 63 hectares of the former Wallaceville Ag- Research site and a small part of the Trentham Racecourse for residential and commercial uses. This includes:

- » Rezoning the majority of the properties from Special Activities Zone to Residential, Residential (Centres Overlay) and Business Commercial Zones
- » Rezoning a portion of the area located south of Alexander Road from Rural Hill to Residential and Residential (Centres Overlay); and
- » Retaining the existing Rural Hill Zoning over the remaining portion of the area located south of Alexander Road

Council officers are currently reviewing all the documentation associated with the plan change to assess whether a submission from GWRC is necessary.

► **Plan Change 38 – Network Utilities and renewable energy generation**

This is essentially the same plan change as Plan Change 34 to Upper Hutt City's District Plan. GWRC made a general submission on Plan Change 38 which proposes to bring the district plan provisions for network utilities into line with the National Policy Statement on Electricity Transmission and the Wellington Regional Policy Statement. It also seeks to give effect to the National Policy Statement on Renewable Electricity Generation by introducing a new Chapter to the General Rules to provide for renewable energy generation. The key issues raised in the submission related to the operational requirements and needs of the GWRC Flood Protection department. They sought that some of the proposed policies be amended, and that new rules be added to lessen the risk of stopbank damage and breaches when transmission lines are being removed and upgraded or maintenance is required on them.

Notified resource consents

Wellington City Council

► **55-85 Curtis Street – earthworks and vegetation clearance**

This notified resource consent was to undertake earthworks and vegetation clearance to prepare the Curtis Street site for development. Consent was granted on 3 December 2014, including provisions that addressed GWRC's submissions on earthworks management and the protection of significant biodiversity values (in line with submission points on Plan Change 77 – see above). The decision to grant consent is under appeal to the Environment Court by other submitters.

Natural hazards

Research Projects

Wellington Harbour Tsunami Modelling Project

GWRC and WREMO are working together with GNS to extend our understanding of the tsunami risk of the region. Part of this work involved research into the rupture mechanisms of the Hikurangi Subduction zone – the major plate boundary interface off the Wairarapa Coast. The project was initiated to investigate the potential for the subduction zone to generate large mega-thrust earthquakes.

It has always been understood that Wellington Harbour has complex interactions with tsunami waves, with the potential to attenuate tsunami wave height in the Harbour. But until recently, there has been insufficient data and knowledge of local conditions to model these interactions. Recent LiDAR and bathymetric mapping in the Harbour, along with research on the Hikurangi Subduction margin has extended our understanding to the point where we can now model tsunami flows in Wellington Harbour. This work will be used to assess the tsunami risk in the Harbour and to redefine the worst case scenario for the evacuation map yellow zone and the blue line project.

A contract has been signed with GNS and the work will start soon, with a completion date by the end of the financial year.

East Coast LAB (Life at the Boundary)

In a related project, GWRC Natural Hazards Analyst has been asked to join a steering committee for an inter-regional hazards research project called East Coast LAB (Life at the Boundary) being led by

Hawkes Bay Regional Council and also involving Gisborne District Council and Horizons Regional Council. The 'Boundary' refers to the Hikurangi subduction zone.

The subduction Hikurangi subduction zone is the tectonic interface between the Pacific Plate and the Australian Plate. The seabed expression of this is one of the deepest ocean trenches in the world 30km off the Wairarapa Coast; the Hikurangi Trench. The interface runs under Wellington at a depth of around 20km and under the Kapiti Coast at about 30km. Movements on the interface are responsible for the slow slip earthquakes that have been occurring on the Kapiti Coast, which are thought to be responsible for triggering other large regional earthquakes, such as the Cook Strait sequence and the Eketahuna Earthquake.

The US National Science Foundation has selected the Hikurangi Margin as one of the three places in the world where a large amount of research effort and money (near \$14m) will be spent on understanding subduction plate boundary phenomena over the next decade.

New Zealand and international earth scientists are keen to find answers to the many outstanding questions about why subduction zones behave the way they do, including what causes abrupt variations in seismic behaviour along subduction margins, understanding slow slip earthquakes, studying earthquake geology to obtain the timing and locations of past Hikurangi subduction earthquakes and tsunami, and earthquake rupture and tsunami scenario modelling to better understand the sources of our risks. All this will help us understand what impacts might be on communities, by defining boundary hazards using history and geology, so we can learn what we can do about it.

East Coast LAB will be a brand around which to:

- ▶ Leverage international research opportunities relating to the Hikurangi tectonic boundary lying off the coast of Gisborne / Hawke's Bay / Wairarapa and the natural hazards associated with this boundary (earthquakes, liquefaction, fault rupture, tsunami)
- ▶ Promote public awareness of the natural hazards, including a dedicated website, marketing and dedicated focal points/local venues (eg, the museum and the National Aquarium in Napier or Te Papa) to share such information

An application to the MCDEM resilience fund to support this project was successfully granted in December and will only require GWRC staff time and occasional travel expenses to attend workshops/meetings.

Greater Wellington Regional Council Hazards Analyst attended the inaugural meeting in February to chart a course of action. The first action was to apply for a government science challenge grant to develop an education outreach programme for schools, to kick off the programme. The application was a success and planning is underway to start the programme.

Regional Natural Hazards Management Strategy

Environment Policy Senior Policy Advisor (hazards) is project managing the development of a regional natural hazards management strategy. The project aims to coordinate hazards management for better consistency and alignment between resource management plans and hazards research across the region. The project has been agreed to by six Local Authorities, Kapiti, Porirua, Wellington, Hutt, Upper Hutt and GWRC. The Wairarapa councils are keeping a watching brief and may join the project at a later point in time. The project advisory team is the regional planning managers group and the project team will report to the Coordinating Executive Group of WREMO.

In recent months, a stocktake of what science councils have commissioned and what is currently being done to manage the risks we face from natural hazards has also begun and this will provide

the basis of information for a gap analysis and provide a talking point to begin engaging local communities.

A community engagement strategy was agreed to by the Chief Executives Forum in December that will start with a messaging programme on Facebook followed by community drop in days.

Civil Defence and Emergency Management

Wellington region civil defence and emergency management group plan

The department continues to work with civil defence emergency management. The latest work has involved updating the understanding of tsunami risk in Wellington Harbour with GNS commissioned to undertake the research.

Presentations/Publications/Media

There have been a number of media articles surrounding the work of the Ruamāhanga Whaitua Committee and Te Awarua o Porirua Whaitua Committee, both on the GWRC website and in local newspapers.

Financial reports

Policy	31 March 2015			Full Year			31 March 2014	
	Actual	Budget	Variance	Forecast	Budget	Variance	YTD Actual	FY Actual
Income Statement Period ending 31 March 2015	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Rates & Levies	2,076	2,076	-	2,767	2,767	-	2,038	2,717
Government Grants & Subsidies	-	-	-	-	-	-	-	-
External Revenue	6	-	6	100	-	100	26	26
Investment Revenue	-	-	-	-	-	-	-	-
Internal Revenue	19	19	-	25	25	-	19	25
TOTAL INCOME	2,101	2,095	6	2,892	2,792	100	2,083	2,768
less:								
Personnel Costs	1,208	1,223	15	1,631	1,631	-	1,095	1,527
Materials,Supplies & Services	123	39	(84)	92	52	(40)	65	77
Travel & Transport Costs	12	5	(7)	7	7	-	22	25
Contractor & Consultants	270	281	11	529	429	(100)	194	289
Grants and Subsidies Expenditure	-	-	-	-	-	-	-	-
Internal Charges	181	161	(20)	215	215	-	176	235
Total Direct Expenditure	1,794	1,709	(85)	2,474	2,334	(140)	1,552	2,153
Financial Costs	-	-	-	-	-	-	-	-
Bad Debts	-	-	-	-	-	-	-	-
Corporate & Department Overheads	344	344	-	459	459	-	311	415
Depreciation	5	5	-	6	6	-	5	7
Loss(Gain) on Sale of Assets / Investments	-	-	-	-	-	-	-	-
TOTAL EXPENDITURE	2,143	2,058	(85)	2,939	2,799	(140)	1,868	2,575
OPERATING SURPLUS/(DEFICIT)	(42)	37	(79)	(47)	(7)	(40)	215	193
Add Back Depreciation	5	5	-	6	6	-	5	7
Other Non Cash	-	-	-	-	-	-	-	-
Net Asset Acquisitions	-	-	-	-	-	-	-	-
Net External Investment Movements	-	-	-	-	-	-	-	-
NET FUNDING BEFORE DEBT AND RESE	(37)	42	(79)	(41)	(1)	(40)	220	200
Debt Additions / (decrease)	-	-	-	-	-	-	-	-
Debt Repaid	-	-	-	-	-	-	-	-
Net Reserves (Increase) / decrease	-	-	-	-	-	-	-	-
NET FUNDING SURPLUS (DEFICIT)	(37)	42	(79)	(41)	(1)	(40)	220	200

Financial variance analysis

- ▶ Policy has a net deficit of \$42k which is \$79k worse than budget surplus of \$37k
- ▶ Personnel costs are close to budget
- ▶ External spend on materials includes committee member fees which are more than planned in the budget
- ▶ Travel costs and consultants costs are close to budget
- ▶ Internal charges are more than budget due to additional ICT costs for PCs
- ▶ The forecast has been updated to include \$100k income and \$100k costs for the Regional Natural Hazards Strategy work being done in association with the local authorities as GWRC is managing the costs of this project. The forecast also includes \$40k for committee member fees
- ▶ There is no capital budget or spend

Performance Measure	Performance Target		Comment
	Baseline	2014/15	
That the Regional Policy Statement is reviewed and adopted	The Regional Policy Statement was approved by the Council in May 2010 and is subject to a number of appeals	Establish a work programme for methods in the RPS	Work is underway to implement the RPS and progress the methods in the RPS, including monitoring of the RPS implementation.
That regional plans are reviewed and adopted	Review of regional plans has been underway since 2009	Review of regional plans continues	The draft Natural Resources Plan was made public on 22 September 2014.

Risk analysis

A potential risk to the time line of the Regional Plan review related to potential reforms of the Resource Management Act have diminished as a result of the Northland by-election result.

1.2 Environmental Regulation



Overview

Notified and 'national' consenting workload remained steady in the last quarter. This quarter's major consenting work was dominated by pre-application and assessment work on a number of major notified applications

Non-notified consent workload dropped in the last quarter following several quarters of high levels of consenting activity dominated by water take and land use consent applications

Compliance activity focussed on regular summer monitoring particularly dominated by land development and water takes compliance; and significant ongoing work in RoNS project compliance for construction and site 'set-up' work

A moderate to high investigations and enforcement load includes the conclusion of significant inquiries and court work

Key results for the quarter

- ▶ Consenting – Ongoing replacement consenting across the region for municipal waste water treatment plants at South Wairarapa; and processing of significant applications including Wellington Waterfront (Site 10 Kumutoto) redevelopment, GW Flood Protection Western Rivers global consents, and CentrePort Harbour deepening
- ▶ Roads of National Significance – Substantial ongoing compliance and consenting work associated with the Transmission Gully pre-construction and enabling works programmes; MacKays to Peka Peka construction work and Peka Peka to Otaki pre-tender phase
- ▶ Appeals – A moderate case load in appeals proceedings in the Environment Court and Court of Appeal
- ▶ Compliance – Development of a Strategic Compliance Programme across all RMA consented activities. Ongoing proactive compliance projects in the 3-waters for major sites in Porirua, Wellington city, Kapiti Coast and Wairarapa
- ▶ Enforcement investigations – Enforcement cases concluded include Jefferies appeal of Jury Trial decision, All Excavation & Reinstatement Services Ltd, Judgeford Heights Ltd/Brian McPhee and Stephen Hammond; and other significant investigations in progress
- ▶ Incidents – Ongoing roll-out of the Ozone Call Centre database and new Incidents module, creation of a GIS layer of incident sites, sampling training for officers
- ▶ Commencement of the *Take Charge* Porirua Area Assessment
- ▶ Regional Plan review input – ongoing input to Draft Plan provisions post submissions

- ▶ Continued roll out of programmes for land development activities including development of consenting processes under the Wellington Housing Accord
- ▶ Ongoing work to implement the Resource Management Amendment Act (RMAA) 2013 consenting provisions
- ▶ Ongoing work on major revisions of procedures manuals for Environmental Regulation statutory process work

Looking ahead

- ▶ Ongoing management of core statutory work with major enforcement investigations, a range of notified consenting projects, and RoNS projects implementation work
- ▶ Development of a comprehensive 'strategic compliance' framework for our consented monitoring programme
- ▶ Rolling out reviewed GWRC Erosion & Sediment Control Guidelines
- ▶ Ongoing input to Draft Natural Resources Plan provisions post submissions
- ▶ Ongoing work with Regional Sector groups and the Ministry for the Environment on RMA reforms; and the development and implementation of processes and procedures in response to the RMAA 2013; and review of proposed reforms under the Government's Phase Three reforms package
- ▶ Ongoing work in Regional Sector groups in responding to developing amendments to the Building Act 1991 regarding large dam and the pending implementation of the Dam Safety Scheme
- ▶ Ongoing work in Regional Sector groups to develop a national Strategic Compliance Framework approach and process
- ▶ Ongoing work with agencies and developers to implement the Wellington Housing Accord
- ▶ Review, update and deliver Health and Safety in the field training for staff

Resource consents

Non-notified consents

In the past quarter we received less applications than the December quarter, and processed around the same number to completion – with an ongoing high number of replacement applications for existing water take consents that expire this financial year (also carried over from the December quarter), bore permits, streamworks (including structures) and RoNS project consents.

Overall, at this stage of the year we are tracking behind the levels of consents processed compared to the same stage of the 2013-14 year.

Consents summary * Figures exclude applications to the EPA

Item	Mar Quarter 2015	Dec Quarter 2014	Mar Quarter 2014
Consents received	141	171	168
Consents issued	76	112	145

Item	2014-15 year to date	2013-14 year
Consents received	470	591
Consents issued	317	635

Item	Mar Quarter 2015	Mar Quarter 2014
Median processing time frame	14	20

Item	2014-15 year to date	2013-14 year
Median processing time frame	14	18

Notified and limited notified consents

A moderate load in assessments completed in the last quarter:

- ▶ **South Wairarapa District Council – Martinborough wastewater treatment plants re-consenting:** The situation remains as previously reported. The proposal is essentially looking at a staged approach to upgrading waste water treatment infrastructure and reducing overall discharges into the river by utilising adjacent land disposal options. Stage 1A involves a series of minor upgrades to optimise its existing performance; Stage 1B involves the discharge of 24% of treated wastewater to 5.3ha of vacant land adjacent the site; Stage 2A involves irrigation of 42% of annual wastewater to Pain Farm; and Stage 2B involves the construction of additional storage at the Plant or Pain Farm to contain all treated wastewater. Stage 1 is programmed to 2022 and Stage 2 from 2022 to 2048. Independent Commissioners have been appointed and a hearing date is now set for 3 June 2015 and is expected to run for three days.
- ▶ **South Wairarapa District Council – Featherston wastewater treatment plants re-consenting:** As previously reported, this application sets out a two-stage proposal: Stage 1 is a targeted rehabilitation of the sewer network to reduce the volume of inflow by up to 31% (2013-2019); and Stage 2 involves the commissioning of a modern high-rate treatment plant (2025). Since the close of submissions, the applicant has requested an extension of the process timeframe in order to review the potential effectiveness of environmental mitigation options ahead of a hearing. The date for the hearing has been provisionally planned for early 2016.
- ▶ **South Wairarapa District Council – Greytown wastewater treatment plants re-consenting:** Again the proposal remains as previously reported - for a staged upgrade: Stage 1A (2014-2018) will involve some minor upgrades to the existing pond system to ensure it is performing to its optimal level; Stage 1B (from 2020) will see approximately 20% of the annual treated wastewater going to 16ha of adjacent land during low flow conditions; Stage 2A (from no later than 2035) – 62% of typical flow irrigated on land at Papawai Farm; and Stage 2B (from no later than 2040) – full discharge to land. The application was notified in December 2014, with 16 submissions being received – 11 opposed, 1 support, 3 neutral and 1 unclear. A provisional hearing date is still planned for mid-2015 (to work in with the possible timings of both the Featherston and Martinborough WWTP hearings).
- ▶ **Wellington City Council – Southern Landfill extension (Stage 4):** – This project remains ‘parked’ as WCC will now design, construct and fill the landfill from the ‘bottom up’ (vs the top down applied for). We understand that WCC will lodge a revised application in the latter half of 2015.
- ▶ **CentrePort Limited – Stage 1 Harbour Dredging:** CentrePort has applied to renew their existing consent to deepen the Wellington Harbour navigational channel and specified berths (existing consent expires in 2015). CentrePort seeks to obtain new resource consent for the same proposed dredging and disposal activity, with a reduced ‘maximum’ depth of 12.2m (below chart datum) to align with the currently consented dredge volume. CentrePort is also now considering a Stage 2 option to increase the current depth of dredging in the Harbour. If they proceed with this option, Stage 2 would likely supersede Stage 1. Notification of Stage 1 is therefore on hold until CentrePort has confirmed plans ahead for Stages 1 and 2. CentrePort is currently in consultation with GWRC regarding methodologies and collection of marine data as part of the pre application phase. CentrePort released a public statement on the Stage 2 dredging proposal in February 2015. Currently, they are continuing with public consultation and are in the process of carrying out further research investigations.
- ▶ **GWRC (Flood Protection) – Western Region global rivers consents:** These are applications to continue existing flood protection and erosion control operations and maintenance activities on the Hutt, Waikanae, Otaki and Waikanae Rivers. Public notification of the four applications will

likely occur in May/June 2015. In the meantime, we are continuing to work with GWRC Flood Protection around possible options for running combined hearings for these applications.

Site 10 Redevelopment Limited Partnership & Wellington City Council - North Kumutoto

Project: In October 2014 Site 10 Redevelopment Limited Partnership & Wellington City Council simultaneously lodged two resource consent applications relating to a proposed five-level commercial building on Site 10 at North Kumutoto (Wellington waterfront), and the construction, maintenance and use of new and modified landscaped public open spaces and associated structures at North Kumutoto. GWRC and WCC jointly publically notified the applications in November 2014 – with 45 submissions received, 38 in opposition, 6 in support and 1 not stated.

In a first for this Council, on 19 December 2014, GWRC and WCC received formal requests from the applicant for direct referral of both applications to the Environment Court which were approved on 29 January 2015. Officers' reports and recommendations to the applicant were submitted on 31 March 2015, and have subsequently been lodged with the Court. Our understanding is that a hearing is expected sometime around August 2015.

Non-notified consent of interest

- ▶ **Porirua City Council, municipal wastewater treatment plant – Short term maintenance consent:** – Wellington Water has applied on behalf of PCC for consents required to carry out a refurbishment to one of the three clarifier's onsite. As part of the treatment process will be offline for three months while this work is carried out, there is a high likelihood of an exceedance of the existing consents discharge limits. Given this, a short term maintenance consent is the 'regulatory solution' that will keep the operation legal. We are currently working with our expert peer reviewer from Cawthron Institute on appropriate discharge limits to apply during this period. We have also requested PCC to discuss these works and obtain written approvals from Ngati Toa Rangatira and Regional Public Health.

Major pre-application discussions continue for:

- ▶ **Woodridge Block:** Cardno is currently preparing to lodge a consent application for the remainder of the Woodridge development in relation to land use consents and discharge permits for bulk earthworks. Lodgement of this application is expected by mid-2015. As the site has been identified as a Wellington Housing Accord area, the developer has indicated that they intend to lodge a resource consent application under the HASHA Act. This will be our first application under the HASHA legislation. The implementation of the Wellington Housing Accord is discussed further in the *Project Work Programme* section of this report.
- ▶ **Wellington International Airport Limited (WIAL):** WIAL met with GWRC recently to discuss the proposed airport runway extension. After receiving confirmation in January 2015 that the extension was viable, Wellington Airport has engaged a number of technical experts and consultants to put together the relevant consent reports which will form a large part of their resource consent application. Their plan is to lodge with the EPA in late July 2015. They also indicated that informal public consultation was scheduled to take place over a 6-week period sometime during April, May and June. We believe the timeframes are considerably tight and we are currently working with WIAL and the EPA to ensure the process is efficient and streamlined.
- ▶ **Kapiti District Council, renewal of stormwater discharge consents to fresh and coastal waters:** Pre application discussions are in the early stages with KCDC. These consents were granted in 2005/06, and since that time, the planning regime has changed somewhat with a new regional plan on the horizon and the NPS for freshwater in existence. We envisage that we will need to

align the consent process outcomes and the Kapiti Whaitua limit setting process; however, we are still to work through this critical aspect.

- ▶ **Moa Point wastewater treatment plant, Wellington – Change of consent conditions:** Wellington Water Limited is in discussions with the original submitters to the 2008 application, regarding the changes needed to the existing consents, following the completion of the QMRA (Quantitative Microbial Risk Assessment) – a model used to predict health and ecological effects from wastewater discharges. WCC completed the QMRA modelling exercise after completing a series of bypass treatment assessments, as required by their consent. The QMRA concluded that treatment of the bypass flows – which are still discharged via the 18km offshore outfall – were not needed because environmental effects were likely to be minor. Once WWL have completed these discussions, we will be in a position to map out a consenting process with them.

Board of Inquiry – national consenting projects including implementation

NZTA – Transmission Gully RoNS: Enabling works on Transmission Gully have commenced and a number of management plans to authorise additional works have been reviewed by GWRC and the relevant local councils. The project constructor Leighton Heb Joint Venture (LHJV) intends to submit, and have certified, a large number of management plans prior to commencing bulk earthworks in September 2015. In addition, applications for changes to consent conditions and new consents will also be forthcoming over the next six months.

Ongoing discussions are occurring with LHJV and Wellington Gateway Partnership (WGP) regarding resourcing and documentation expectations. There have been three environmental incidents on site to date and discussions are ongoing with the constructor regarding systems, procedures and expectations to avoid such incidents in the future.

- ▶ **NZTA/MacKays to Peka Peka Alliance – MacKays to Peka Peka RoNS:** Construction of the M2PP expressway is ongoing. GWRC site audits are occurring weekly. Good levels of compliance on site are being achieved – and multiple management plans are still being received and certified on a regular basis. The number of resource consent applications for ancillary works/changes in design reduced in this quarter, although there are several expected in the next quarter. Fortnightly consenting meetings between the RoNS Project Leader and M2PP planners and compliance managers, also continues, as does a monthly compliance meeting.
- ▶ **NZTA – Peka Peka to Otaki RoNS:** Opus has been contracted by NZTA to prepare the ‘specimen design’ for the Peka Peka to Otaki RoNS project. This will involve preparation of draft management plans and potentially applications to change conditions, and for consents for ancillary works associated with that project. GWRC staff and external experts have been in discussions and meetings with NZTA/Opus experts to discuss design modifications and management plan requirements. An Advisory Group has been established with representatives from GWRC, KCDC and NZTA which meets quarterly to discuss upcoming work and resolve any higher level matters. The project will go out to full Design and Construct tender mid-2015 and construction is anticipated to commence around mid-2016.
- ▶ **NZTA – Mt Victoria Tunnel duplication:** Following the Basins decision, there has been no further discussion with NZTA on the Mt Victoria Tunnel duplication project.

Appeals, objections, and declarations

Ongoing work on a several existing appeals and objections:

- ▶ **Alan Jefferies – conviction appealed:** This appeal relates to charges laid in 2010 for the alleged diversion of the Mangaroa River, associated river works and deposition of fill. A jury trial concluded in August 2014, and Mr Jefferies was found guilty and convicted on three charges and

found not guilty on the fourth charge. Mr Jefferies was fined \$18 000 by Judge Harland in sentencing in the District Court. Mr Jefferies filed an appeal with the Court of Appeal against the sentence and one of the convictions, which was set down to be heard on 2 March 2015. Following exchange of submissions, Mr Jefferies has withdrawn his appeal and the original sentence of the District Court stands. This completes a number of pieces of litigation that has been ongoing since 2010.

- ▶ **A J Barton – GWRC consent application objection:** As previously reported, A J Barton has objected under s357 of the RMA to GWRC's decision to return his application for a water take under s88 of the Act as there was insufficient information to process the application. Negotiations [on a without prejudice basis] are still ongoing. A way forward has been agreed with agents working on behalf of Mr Barton, which involves Mr Barton amending his proposal and providing the additional information originally requested. If this information is not forthcoming or the negotiations stall then a hearing date will be set.
- ▶ **AJ & RM Teasdale – Te Marua Golf Club – erosion protection works:** This is an appeal to the Environment Court of a decision (July 2014) to grant consent to undertake erosion control works on the Hutt River along the north-western edge of the golf course. Mediation was held on 11 November 2014, where the appellant sought to determine a preferred alignment for the river, as well as a commitment from GWRC to assist with funding for works beyond the isolated works fund. However, GWRC has no ability to contribute financially to the proposed river works, and as such the mediation has been drawn to a close. A court hearing date has now been set for 30 April 2015, and evidence is currently being prepared.

Consented compliance monitoring

- ▶ **Kapiti Coast District Council – public water supply project (River recharge with groundwater):** This quarter saw some media attention on the Kapiti Water Project, with a 'switch' to 100% bore water in late February following the recalculation of the Waikanae River flows by GWRC. This 'switch' was needed by KCDC in order to comply with their conditions of consent relating to low flows in the Waikanae River. With the taking of bore water, the monitoring of water levels and water quality parameters have continued, through the baseline monitoring programme. Baseline monitoring data is being used to assess against interim trigger levels and during this quarter no triggers levels were reached. KCDC has recently submitted the Bore Hierarchy Plan for certification and in the coming quarter will complete and submit for certification the Waikanae Borefield Operations and Maintenance Manual, as well as the Waikanae River Take Operations and Maintenance Manual. At this time, KCDC is in full compliance with their consent conditions.
- ▶ **PCC Porirua wastewater treatment plant – discharge to CMA at Rukatane Point:** In this quarter the first Community Liaison Group meeting was held for many years with a great turn out. This meeting focussed on updating the attendees on what has been happening and plans for the future. Following GWRC direction, the Risk Communication Strategy has had a total overhaul and update. This document outlines the process and communication that will go out to Regional Public Health and the community if there is a bypass discharge from the plant. Its aim is to reduce the likelihood of health effects from contact with partially treated wastewater. Our work to better understand the effects of the by-pass discharges on public health and coastal waters continues, with the engagement of experts from Cawthron Institute. This work will begin in earnest in the next quarter.
- ▶ **Wellington City Council – Global stormwater discharges to the CMA:** The roll out of the actions from the approved Stage 1 Integrated Catchment Management Plan (ICMP) continues on with a programme for the Lambton Harbour catchment (Wellington City CBD) being undertaken. This includes investigations, modelling and sampling. To begin with this will focus in on the Southern

part so the catchment and its associated outfalls to the Harbour. Also at the last *Stormwater Consultative Committee* meeting (a requirement of the consent) Wellington Water advised that the educational requirement of the stormwater consent would now be handled in a more co-ordinated and integrated way across the three waters – Stormwater, Wastewater and Drinking Water across the four cities.

- ▶ **Porirua City Council – Spicers Landfill operations:** The instances of odour from PCC’s Spicer Landfill affecting Tawa residents have continued over the last quarter. In February a public meeting was held with the community and PCC which GWRC attended. From the meeting it was clear that getting information out to the community about the site and GWRC’s role was critical. To address this we have set up a webpage where the community can get information about our role, PCC responsibilities, the odour investigation process and the outcomes of any compliance investigations. The drivers for offensive odour discharge from landfills can be complex and interlinked. Given this, we have engaged consultants to assist in this aspect of compliance. They will be reviewing the landfills operational and design practices for cell construction; gas collection, control and destruction; tip face practices including daily cover. They have completed an initial assessment of the site and we have received a report summarising their findings and providing recommended actions for PCC. We will be working with PCC to implement any necessary changes, particularly through a revision of relevant landfill management plans. This site remains a priority site for the work of the department.
- ▶ **Masterton District Council – Wastewater Treatment Plant (Homebush):** The Homebush plant is still in the early phases of implementing a new summer discharge to land regime following re-consenting in 2007-09. The plant faces a number of teething issues regarding the automated operation of border strip irrigation technology, particularly around the over-application of wastewater. We are currently actively monitoring the site and working through the issues with MDC.
- ▶ **Regional Earthworks Sites:** To date the 2014/15 earthworks season has been steady and with no major incidents. There is approximately six weeks left of the season and many operators are in the process of completing works and stabilising earthworks sites. We expect to see shortly applications from consent holders to continue works over winter months in line with our regulatory Winter Works Protocol. This protocol is based on site resilience and compliance performance throughout the earthworks season.

Environmental incidents

341 incidents were notified and responded to in the quarter, up from 288 in the previous quarter and 242 in the September 2014 quarter. A summary breakdown of incidents is reported 6-weekly through the Councillor’s Bulletin.

Enforcement

Abatement and infringement notices

Item	March Quarter 2015	December Quarter 2014	March Quarter 2014
Abatement notices	5	1	9
Infringement notices	3	5	6

Item	2014-15 year to date	2013-14 year
Abatement notices	21	81
Infringement notices	20	36

Prosecutions and enforcement orders

Significant prosecutions and enforcement order work in the last quarter includes:

- ▶ **Brian McPhee and Judgeford Heights Ltd:** Two charges were laid on 28 July 2014 against each party as a result of reclaiming 40m of streambed within the Pauatahanui catchment. Guilty pleas were entered on 14 October 2014. Both parties were convicted and fined \$18,750 each on 21 January 2015 in Wellington District Court.
- ▶ **Stephen Hammond and Pope and Gray Contractors Limited:** One charge was filed against each party in Masterton District Court on 14 October 2014 in relation to the excavation and disturbance of the bed of the Papawai Stream. On 8 December 2014 Stephen Hammond pleaded guilty to the charge, and the charge against Pope and Gray Contracting Limited was withdrawn. As a result of this proceeding, Pope and Gray Contracting Limited has undertaken to provide environmental education to their customers and associates by writing to them about good environmental practices to meet the requirements of the RMA and Regional Plans. Stephen Hammond was convicted and discharged on 3 March 2015 in Wellington District Court after entering a restitution agreement with GWRC whereby he paid \$15 000 to Papawai Community Trust, to be used to enhance the environment in the area where the offending occurred, and \$2,000 to GWRC for costs.
- ▶ **Selwyn Stephens and Warren Phillips:** Three charges were laid on 17 March 2015 against each party as a result of stream works resulting in reclamation, disturbance and diversion of a stream within the Pauatahanui catchment. First call of the matter will be in Porirua District Court on 21 April 2015.

Take Charge Programme

As previously reported, the *Take Charge* programme has started working in the Porirua area at the beginning of the financial year. We are currently focusing on businesses in the Wall Place area. A walk-over of the area was undertaken in late September and early October to identify businesses that may benefit from participating in the pollution prevention programme.

During the January to March quarter a further five businesses received a Take Charge audit bringing the total number of businesses audited in the Wall Place area to 10. Two businesses have completed the programme requirements and been issued with a certificate. The remaining businesses are working towards completing the programme requirements.

Requirements vary between businesses, but the common areas are washing of vehicles or equipment so that the wash water does not enter stormwater, and improving spill kits and spill procedures.

Some businesses in the Wall Place area are reluctant to participate in the programme. We are currently looking at additional ways to encourage uptake and engage businesses by promoting the positive aspects of the programme. A short article is due to appear in *Our Region* in April, showcasing the businesses that have completed the programme.

Projects work programme

Progress on recent significant projects include:

Strategic Compliance Project

During this quarter the Strategic Compliance Project (SCP) focussed on refining monitoring programmes that were designed by staff in December and developing and improving supporting database and reporting systems. One outcome of this is that more focus will be placed on programming and completing compliance at key milestone points during any given year. The new monitoring programmes have resulted in a number of proposed changes to compliance charging schedules in the Resource Management Charging Policy (see below).

Review of Resource Management Charging Policy

This quarter a review of our Resource Management Charging Policy was completed. This has resulted in proposed amendment to our Resource Management Charging Policy being released for consultation mid-March. Key changes proposed are:

- ▶ An increase to our charge out rate of \$5/hour and changes to our initial fixed application fees
- ▶ Updated compliance monitoring charge schedules based on outcomes from the Strategic Compliance Project (see above)

There are a number of other minor changes to the Policy. Submissions on the proposed amendments close on 20 April 2015. A hearing will then be held to consider submissions and decide on the proposed amendments.

National water use data requests

Preparation has commenced this quarter on the collation of the water use dataset for 2013/14. The Ministry for the Environment requires all water use data submitted by water take consent holders. The data request this year is more detailed and complex and is taking time to work through. In addition, all water use data will be uploaded onto a Water Quantity module on the LAWA website.

GIS Layer for Incidents

In coordination with ICT a GIS layer has been set up which identifies on a map the location of all historical environmental (pollution) incidents held in our EDocs filing system. Work is continuing with ICT to identify a system and method for creating a GIS layer for all future environmental incident locations. This will improve the organisational knowledge of environmental incidents within catchments and recurring issues and incident history for officers.

Sampling training

Environmental Regulation staff participated in competence based investigation and compliance sampling training during last quarter. The training module was developed by our own staff to ensure maximum relevance – involving resources to support it as well as classroom and field based training and assessments. The aim of the training is to ensure that our sampling decision making, process and methods are absolutely robust. This training was rolled out to the RONS team during this quarter.

Investigation Manual

An Investigation Manual has been drafted documenting the process and procedures that should be followed from the point where non-compliance is detected through the investigation and enforcement process. This will replace the Enforcement Manual. This will be finalised and rolled out to staff in the next quarter.

Incident Response Manual

An Incident Response Manual is being drafted documenting the process and procedures for responding to an incident notification through to the point where non-compliance is detected. This will replace the outdated Incident Response Protocols. The drafting will be completed within the next quarter with a view to roll-out in the following quarter.

Review of Erosion and Sediment Control Guidelines

Our review of the Erosion and Sediment Control Guidelines is approaching completion. We are still awaiting a technical peer review of the drafted Guidelines.

Special Housing Areas

WCC signed a Housing Accord with Central Government on 24 June 2014 to help increase housing supply and improve the affordability of homes in Wellington City by providing an environment that facilitates development.

The Accord enables WCC to use the Housing Accords and Special Housing Areas Act 2013 (the HASHA Act). The Act enables streamlined consenting processes for residential developments (called 'qualifying developments') in areas designated as Special Housing Areas (SHAs).

The *first tranche* of Special Housing Areas was approved by the Government on 20 November 2014, and includes all of the identified growth areas outlined in the (draft) *Wellington Urban Growth Plan*.

On 12 March 2015, the second tranche of SHAs was presented to the WCC Transport and Urban Development Committee. The committee did not recommend any of the 13 sites for consideration. The second tranche sites, including three additional sites, were then presented to a full WCC Council meeting on 8 April 2015. Councillors considered the nominations and approved 13 of the 16 SHA sites.

The process from here is WCC will put together the required nomination paperwork to send to the Minister to approve. By the end of May or early June the second tranche sites are expected to be gazetted and applicants can lodge formal applications under the HASHA Act.

Financial reports

Regulation Income Statement Period ending 31 March 2015	31 March 2015			Full Year			31 March 2014	
	Actual \$000	Budget \$000	Variance \$000	Forecast \$000	Budget \$000	Variance \$000	YTD Actual \$000	FY Actual \$000
Rates & Levies	1,774	1,774	-	2,365	2,365	-	1,699	2,265
Government Grants & Subsidies	-	-	-	-	-	-	-	-
External Revenue	1,948	1,785	163	2,530	2,400	130	1,897	2,720
Investment Revenue	-	-	-	-	-	-	-	-
Internal Revenue	44	94	(50)	125	125	-	104	203
TOTAL INCOME	3,766	3,653	113	5,020	4,890	130	3,700	5,188
less:								
Personnel Costs	2,083	2,052	(31)	2,736	2,736	-	1,960	2,647
Materials,Supplies & Services	60	79	19	105	105	-	61	78
Travel & Transport Costs	28	34	6	45	45	-	31	42
Contractor & Consultants	803	469	(334)	1,025	625	(400)	978	1,529
Grants and Subsidies Expenditure	-	-	-	-	-	-	-	-
Internal Charges	428	431	3	574	574	-	391	544
Total Direct Expenditure	3,402	3,065	(337)	4,485	4,085	(400)	3,421	4,840
Financial Costs	-	-	-	-	-	-	-	-
Bad Debts	57	-	(57)	100	-	(100)	29	196
Corporate & Department Overheads	563	563	-	750	750	-	509	678
Depreciation	17	30	13	41	41	-	23	30
Loss(Gain) on Sale of Assets / Investments	-	(16)	(16)	(16)	(16)	-	-	-
Total Indirect Expenditure	637	577	(60)	875	775	(100)	561	904
TOTAL EXPENDITURE	4,039	3,642	(397)	5,360	4,860	(500)	3,982	5,744
OPERATING SURPLUS/(DEFICIT)	(273)	11	(284)	(340)	30	(370)	(282)	(556)
Add Back Depreciation	17	30	(13)	41	41	-	23	30
Other Non Cash	-	17	3	(16)	(16)	-	-	-
Net Asset Acquisitions	-	(56)	38	-	(56)	56	-	-
Net External Investment Movements	-	-	-	-	-	-	-	-
NET FUNDING BEFORE DEBT & RESERVE	(525)	-	(525)	(315)	(1)	(314)	(259)	(526)
Debt Additions / (decrease)	-	-	-	-	-	-	-	-
Debt Repaid	-	-	-	-	-	-	-	-
Net Reserves (Increase) / decrease	-	-	-	-	-	-	-	-
NET FUNDING SURPLUS (DEFICIT)	(525)	-	(525)	(315)	(1)	(314)	(259)	(526)

Regulation Capital Expenditure Statement Period ending 31 March 2015	31 March 2015			Full Year			31 March 2014	
	Actual \$000	Budget \$000	Variance \$000	Forecast \$000	Budget \$000	Variance \$000	YTD Actual \$000	FY Actual \$000
Total Asset Acquisitions	-	72	72	-	72	72	-	-
Capital Project Expenditure	-	-	-	-	-	-	-	-
Asset Disposal Cash Proceeds	-	(16)	(16)	-	(16)	(16)	-	-
Net Capital Expenditure	-	56	56	-	56	56	-	-

Financial variance analysis

- ▶ Regulation has a net deficit of \$273k which is \$284k worse than budget. The RONS projects (Roads of National Significance) have contributed a \$130k surplus which offsets some of the costs of other EREG activities
- ▶ External income is \$1,948 which is \$163k more than budget. \$692k of this invoicing is on charging of costs for RONS project work
- ▶ Regulation consultants & contractors spend of \$803k is \$334k more than budget due to using consultants for consent processing and compliance monitoring work and includes \$376k for RONS projects. There are also \$62k legal costs for enforcement activity

- ▶ Personnel costs are slightly over budget but around 50% of staff costs are oncharged to consent holders
- ▶ Travel costs and materials are all close to budget
- ▶ The provision for doubtful debts (on debtors balances over 90 days old) has increased by \$57k to \$337k. Of this balance \$180k relates to just one debtor where we have negotiated repayment terms so some of this debt will be collected
- ▶ There is no capital spend to date and it's likely that one of the two vehicles will be purchased next year
- ▶ The forecast has been updated to include \$130k more external income and \$400k for the related consultants costs, and also a provision for doubtful debts of \$100k which reduces the net result to a \$339k deficit

Performance Measure	Performance Target		Comment
	Baseline	2014/15	
Percentage of resource consents ¹ processed within 20 working days ²	98% (2010/11)	98.7%	100% No exceedences this quarter. 74 consents processed.
Percentage of monitoring inspections completed for resource consents with individual monitoring programmes	98% (2010/11)	100%	Rated at year end following the completion of the annual compliance programme.
Percentage of environmental incidents reported to the 24-hour incident response service investigated in accordance with legal timeframes ³ for enforcement	68% (2010/11)	100%	99.1% 3 exceedences this quarter. 341 environmental incidents investigated.

Risk analysis

None identified in this department.

1.3 Environmental Science

Overview

Ongoing collection and data management for SoE programmes, including reviewing SoE monitoring programmes

Work around provision of science and environmental information for Ruamāhanga Whaitua and preparation for the Te Awarua o Porirua Whaitua

Continuing to support the RMA plan process with additional investigations and research as required, and provision of scientific information to major projects including Wairarapa Moana, Mangatarere, WWUP and Wellington Harbour

Continuing to define working in partnership with iwi in science in association with Te Hunga Whiriwhiri (SCEG)

Investigating a multi-agency approach to delivering the monitoring and research required to support regional operational activities and community outcomes

Provision of a range of advice and information to internal departments and community

Key results for the quarter

- ▶ Completion of an Implementation Plan for the department which outlines actions for 2014-2016 in order to realise our strategy goals and objectives
- ▶ Commencement of a comprehensive review of all SOE monitoring programmes
- ▶ Completion and submission of a first draft Asset Management Plan for the department
- ▶ Development and signing of a Memorandum of Agreement between the Environmental Science department (ESci) and Water Supply/Wellington Water for the provision of hydrological and terrestrial monitoring services by ESci
- ▶ Successful gazettal of a new Masterton airshed
- ▶ Successfully secured joint funding for two Victoria University summer scholarships
- ▶ Completion of the 2013/14 Annual Data Reports for our river, lake, coast, hydrology, groundwater quality and soil quality State of the Environment monitoring programmes
- ▶ Delivered three presentations at the International Harmful Algae Conference in October (Wellington) and six presentations at the Water Symposium in November (Blenheim)

- ▶ Rolled out a new communications plan and campaign (“Summer Check”) for recreational water quality in preparation for summer, including the development of a new interactive map on our website which displays current water quality and toxic algae warnings
- ▶ Delivered, on behalf of the regional sector, analysis of national water quality data for the launch of the new coastal and revised freshwater recreational modules on LAWA
- ▶ Production of a YouTube clip <https://www.youtube.com/watch?v=G9A0W1-lq9E> illustrating how kaka have spread out from Zealandia since their successful re-introduction in 2002
- ▶ Secured a partnership with MfE and MPI on the collaborative modelling project (development of a framework for scenario testing of land use impacts on water quality to inform the whitua), including a successful application to the Community Environment Fund (MfE) worth \$100k
- ▶ Completion of two major reports on Kapiti Coast groundwater resource investigations
- ▶ Delivered a science seminar and completed several technical reports that inform implementation of the Porirua Harbour and Catchment Strategy and Action Plan
- ▶ Development and signing of a Memorandum of Agreement between ESci and the Biodiversity department to define roles and responsibilities, interdepartmental processes and monitoring services provided by ESci

Looking ahead

- ▶ An ongoing focus for the year is the review of SoE monitoring programmes which will take into consideration future information requirements (particularly for the whitua) as well as central government directives such as NOF
- ▶ The development of a permanent air quality monitoring station in conjunction with WelTec for our Wellington City monitoring site
- ▶ Increased science requirements for the management of contaminated sites, in particular Te Mome Stream, Miramar Gasworks and a residential site in Wellington City
- ▶ Ongoing development of MoA’s (Memorandums of Agreement) with various internal departments to define services provided by the science department
- ▶ Development of cultural health monitoring indicators and investigation of a joint approach to environmental monitoring and reporting
- ▶ Establishing a multi-agency approach to fish monitoring and research with our iwi partners
- ▶ Working in partnership with iwi, NGO’s and TA’s to provide an increasingly integrated monitoring network
- ▶ A modelling framework for scenario testing has been developed and future work will be focussed on refining the architecture required to run scenarios (initially) for the Ruamāhanga Whitua
- ▶ Ongoing input to the Ruamāhanga and Te Awarua o Porirua Whitua
- ▶ Ongoing input to LAWA, the next phase being a new module for hydrological data
- ▶ Implementation of the department’s Communications Plan
- ▶ A complete revamp of the Environmental Science webpages including making monitoring data more readily available and accessible
- ▶ Development of a business plan (and associated business processes) to inform the departmental progress in accordance with the LTP and assist in future LTP development

Departmental activity

General

The more significant areas of work for the department during the quarter were:

- ▶ Provision of a range of technical advice to Environmental Regulation, Environmental Policy, Biodiversity, Biosecurity, Parks, Flood Protection and Water Supply departments
- ▶ Ongoing input and technical support for the next iteration of the Natural Resources Plan
- ▶ Input at workshops to the Environmental Monitoring and Reporting (EMaR) initiative including providing technical support to various project teams
- ▶ Ongoing input to LAWA including provision of technical and site information for a new hydrological module
- ▶ Completion of several technical reports that inform implementation of the Porirua Harbour and Catchment Strategy and Action Plan
- ▶ Implementation of a suite of water resource investigations for progression over the next two years in partnership with the Wairarapa Water Use Project (WWUP)
- ▶ Ongoing support and provision of science information to the Ruamāhanga and Te Awarua o Porirua Harbour whitua committees, particularly the development and coordination of the Collaborative Modelling Project
- ▶ Engagement with mana whenua through the Te Hunga Whiriwhiri team on developing a partnership in science
- ▶ Science presentations to local and national conferences/audiences
- ▶ Involvement in interagency expert working groups and workshops on science issues of regional and national importance
- ▶ Development of an innovative new air quality monitoring station at the inner city site
- ▶ Review of the “Summer Check” campaign and ongoing improvements to public communication of recreational water quality information

A summary of work carried out in the various teams within the departments is as follows:

Air quality and climate

New inner city monitoring site planned

The Wellington central air quality monitoring site, that has been on the corner of Victoria and Vivian Street since 2004, was permanently moved late last year to make way for Wellington City Council’s Victoria Street precinct upgrade. Our mobile monitoring station has been installed one block to the west as a temporary measure while we work with WelTec to design a new monitoring station for the site. We are planning to build a larger monitoring station that can accommodate instruments to measure other traffic-related air pollutants such as PM2.5. We are also planning to include a real time display of air quality information so people walking and driving past the station can see at a glance what the air quality is like.



Mobile monitoring station on the new site at the corner of Willis Street and SH1

Aquatic ecosystems and quality

The quarter was busy with summer field work and service delivery for other departments. In late March two staff attended *Manaaki Taha Moana – Restoring coastal ecosystems of cultural significance*. This was a national symposium reporting and reflecting on six years of research collaboration between western scientists and iwi researchers in Horowhenua and Tauranga Moana. One of the staff also attended *Kei Tua o Te Pae – Researching Rangatiratanga, Innovating Matauranga*. This two-day hui encouraged expansion of thinking around rangatiratanga and mātauranga. This year's contributing kaikōrero and panellists included artists, community leaders, environmentalists and academics from across New Zealand.

Rivers and streams

Annual biological sampling (of algae and macroinvertebrates) and habitat assessments of our River State of the Environment (RSoE) sites were completed during the quarter. Stable flow conditions in January meant sampling was completed much earlier in the year than usual.

Work continues on the review of the RSoE monitoring programme.

A big focus during the quarter was several summer research projects investigating factors contributing to benthic cyanobacteria (toxic algae) blooms:

- ▶ Two Victoria University students who received summer scholarships to investigate nutrient sources entering the Hutt River are in the finishing stages of writing up their findings. Preliminary results have already substantially increased our understanding of nutrient inputs into the Hutt River. The reports are due in April and the students will present their findings to selected GWRC staff in May
- ▶ A Victoria University Masters student and part-time ESci staff member have been monitoring Hutt and Waipoua river sites for benthic cyanobacteria and instream nutrient concentrations. Although this monitoring is ongoing, early results indicate cyanobacteria growth is linked to certain nutrient thresholds. Work has also begun with the Flood Protection department examining the role deposited sediment plays in toxic algae growth

- ▶ Investigation of the nutrient sources within the Pakuratahi and Mangaroa catchments has revealed nutrient inputs are largely diffuse sourced
- ▶ Investigation of the nutrient sources into the reach of the Hutt River that extends from Moonshine Bridge to Taita Gorge (Upper Hutt) has shown there is a spike in nutrient concentrations associated with groundwater in flows in this reach. We are working with GNS to further elucidate the source of these nutrients

Some fishing was carried out during the quarter. This included a survey of the Kopuaranga River in which staff were joined by local Wairarapa Kaitiaki tikanga rōpū to look at how GWRC monitors the environment and how the survey can take into account mātauranga Māori.



Discussing fish monitoring methods on the banks of the Kopuaranga River in the Wairarapa

Two of our freshwater scientists are involved with an expert working panel on benthic cyanobacteria (toxic algae) established by MfE to further develop the National Objectives Framework (NOF) associated with the National Policy Statement for Freshwater Management (NPS-FM). One of our freshwater scientists has also been participating in a working group to progress the incorporation of macroinvertebrate data into the Land, Air, Water Aotearoa (LAWA) website. This biological data will complement the water quality data already available on LAWA.

Lakes

During our routine monthly monitoring of Lake Wairarapa, the aquatic plant *Nitella pseudoflabellata* was found at one of our sampling sites. This is an important find as a lack of aquatic plants has been highlighted as a significant issue limiting the ecological health of the lake. We have always assumed that plants were largely absent from the middle of the lake.

Estuarine and marine waters

Annual monitoring in five key estuaries (Porirua Harbour – Onepoto and Pauatahanui arms, Hutt, Waikanae and Whareama) was completed in January. We also conducted a detailed survey of invertebrate communities and stormwater contaminants in the intertidal sediments in Te Awarua-o-Porirua Harbour. This is the second such survey, the baseline survey having been conducted five years ago in 2010. Results of this monitoring will be available mid-2015.

In March a report was completed on the first two years of continuous turbidity monitoring in the three main tributaries of Te Awarua-o-Porirua Harbour (Horokiri, Pauatahanui and Porirua streams). The turbidity monitoring results will be used to calculate how much sediment enters the harbour every year, although we will need to monitor a range of conditions over a number of years before we can accurately make such calculations. To date the highest turbidity (amount of suspended sediment) recorded has been in Pauatahanui Stream.

Reporting was completed by DHI on faecal contaminant plume modelling in Te Awarua-o-Porirua Harbour. The purpose of the modelling is to predict which areas of the harbour are at greatest risk from faecal contamination, and understand which conditions (eg, wind, tides) may make the harbour unsuitable for recreational activities or shellfish gathering. Results indicate that Porirua and Kenepuru streams have the greatest influence on faecal contaminant concentrations throughout the Onepoto Arm of the Harbour. Further data collection and validation of the model is planned.

A Victoria University student who received a summer scholarship completed a project on the health of seagrass in Te Awarua-o-Porirua Harbour. The results showed that seagrass throughout the harbour is generally in good condition, and that the best condition seagrass meadows are at Elsdon, Mana and Bradey's Bay.

Our coastal scientist is now part of a DOC-led project on Cultural Health Indicators. This purpose of this project is to identify marine cultural health indicators of relevance to Ngati Toa for the estuarine and coast environments they oversee. The project team are preparing a proposal for funding, which once secured will be used to develop a plan for Ngati Toa to undertake cultural health monitoring.

In March our coastal scientist presented, on behalf of the Coastal Special Interest Group (SIG), a draft research strategy to a SIG workshop held at the Royal Society. This was an opportunity for all of the SIGs (eg, Air Quality, Natural Hazards, Land Forum, SWIM, etc.) to present their research strategies and contribute to the review of the overarching SIG strategy. Not surprisingly there were many overlapping themes and goals – these included understanding the effects of climate change, the need for more effective science communication and the importance of developing nationally consistent data collection and reporting protocols.

Recreational water quality

Weekly recreational water quality monitoring continued throughout the quarter at 20 river and 61 coastal sites. Health risk warnings related to faecal contamination were issued at South Beach at Plimmerton on 15 January following repeated high bacteria counts. Investigations by Wellington Water identified a broken sewer pipe in the area which was subsequently fixed. Health warnings were also issued for the western end of Petone Beach on 19 February and 3 March following repeated high bacteria counts. Investigations by Hutt City Council and Wellington Water did not identify a source of contamination. High bacteria counts were recorded at Rona Bay at Cliff Bishop Park (Eastbourne) and Wainuiomata River at Richard Prouse Park on 19 and 27 March respectively, and also could not be linked to a clear source of contamination.

Health warnings related to toxic algae growth were issued for the Hutt River between Silverstream and Melling, and the Ruamahanga River at Te Ore Ore and Kokotau in late January after large amounts of detached algal mats were found at the edge of the rivers. The algal mats were washed away shortly after. Large amounts of detached toxic algal mats were also found in the Hutt River at Poets Park and Silverstream in early March prompting health warnings to be issued. No dog or human health issues were reported as a result of toxic algae growth.

All health warnings were posted on our Summer Check webpage <http://www.gw.govt.nz/summer-check> and LAWA www.lawa.org.nz.

During March a review of the Recreational Water Quality monitoring programme was initiated. The review is intended to check that sampling sites, sampling frequency and the parameters measured are fit for purpose. The initial stage of this review involves collecting information from members of the public as well as water sports clubs and groups on when and where they like to recreate in the region.

Terrestrial ecosystems and quality

Contaminated land

A remediation project for two suburban properties located on an old landfill site (part-funded by MfE's Contaminated Site Remediation Fund) is underway. Delineation of the extent of the contamination has been completed and soil samples have been analysed to determine levels of lead and arsenic present. It is estimated that 480m² of soil needs to be excavated to a depth of 0.5m to remove the contaminated material. The next stage in the project will involve the preparation of a remedial action plan and an application for resource consents.

Golder Associates reviewed 60 files of potential new SLUR sites. Of those sent for review, 53 sites had sufficient information and have been added to SLUR. Letters were sent to the property owners of these 53 sites and we have received 18 responses in return. The SLUR team also responded to 79 SLUR enquiries during the quarter.

Dave Bull from Golder Associates organised another regional catch-up for contaminated land/SLUR (Selected Land Use Register) officers, which was hosted by GWRC. The SLUR team gave an update including procedures for new sites, and a demonstration of SLUR tools available for city and district council staff. The SLUR team also provided draft copies of the updated SLUR manual which is in the process of being updated. Two detectives from NZ Police gave a presentation on clandestine P-labs and issues to be aware of. They brought in several exhibits of typical items seized during investigations.

Our Senior Terrestrial Scientist gave a presentation on SLUR to the Environmental Protection team.

Soil quality

Our Senior Land Scientist, in conjunction with three other regional councils, presented a paper at the Massey University Fertilizer and Lime Research Centre (FLRC) conference titled "Soil quality monitoring across land uses in four regions: Implications for reducing nutrient losses and for national reporting". The paper concluded that the following were of most concern:

- ▶ Low organic carbon and anaerobically mineralisable nitrogen in land used for market gardens
- ▶ Low macroporosity (ie, soil is compacted) in land used for dairying
- ▶ High Olsen P values (indicator of phosphorus levels) in land used for market gardens, dairying, horticulture and arable land

Our Senior Land Scientist, in association with several other regional councils and MfE staff, is also contributing to the development and implementation of land-based indicators for the EMaR project. A review of background information and soil indicators has been written, and potential indicators for the land component of LAWA are being investigated.

Our Senior Land Scientist attended the national Cadmium Management Group meeting and took part in an expert advisory panel on an Envirolink tools project being undertaken by Landcare Research. The projects main aim is to develop an agreed methodology for determining background

soil concentrations of trace elements/heavy metals. This will be useful for managing cleanfills, soil quality and identifying contaminated sites.

A brochure for farmers called “Reducing impacts of winter grazing on soil and water quality” was prepared in collaboration with GWRC Land Management officers. The brochure outlines the effects of winter grazing on soil and water quality, and management practices that can reduce or minimise these impacts.

Groundwater quality

Quarterly Groundwater Quality State of the Environment (GQSoE) sampling runs were completed in March 2015. A new iPhone app was trialled on behalf of GNS (when doing GQSoE sampling runs our field staff also take samples for GNS’s National Groundwater Monitoring Programme) to test the suitability of replacing paper fieldsheets with electronic fieldsheets. The trial was a great success minimising the need for paper-based recording in the field and will save time transposing data into GNS’s database. It’s hoped that something similar will be developed for the GQSoE programme.

A memo looking at contamination in the Waingawa Wetland (and surrounding industrial area) and the Waingawa/Parkvale aquifer has been drafted and is ready for review. The memo summarises the findings of historic information and assesses the need for further environmental testing to determine the extent and cause of contamination.

NIWA has been working on a document of the fundamentals of groundwater ecosystems and the importance of protecting groundwater quality and ecosystem health. This document provides a rationale for the inclusion of groundwater outcomes in the draft Natural Resources Plan and will also aid the GQSoE programme review. It is hoped it will become a national reference document.

Terrestrial biodiversity

During the quarter, terrestrial biodiversity SoE monitoring was completed at 17 sites selected randomly from a regional 8 x 8 km grid. Birds, vegetation and pests were measured, with some interesting botanical finds being made in the Eastern Wairarapa. The field team also liaised with Landcare Research staff that collected soil samples at two sites as part of the national research project on “Next Generation” techniques for biodiversity monitoring.



Monitoring terrestrial biodiversity on a farmland plot

A regional SoE monitoring programme for wetlands is currently in development. A number of wetland surveys and assessments have been completed in order to improve the accuracy of the wetland database, and staff also visited some wetlands to ground-truth vegetation typing that has been done using aerial photography.

Bird monitoring was completed during summer as part of Project Kaka. An analysis of the monitoring results by DOC provides strong evidence that vulnerable species such as bellbird, rifleman, tomtit, whitehead and kakariki have increased in areas receiving 1080 possum control. Other species such as grey warbler, silvereve and fantail appear to be less affected by possum control and fluctuate in response to weather and food abundance.

Following the completion of regional threat lists for birds and lizards in the Wellington region, work on a threat list for plants is now underway. This process will take some time as there are around 1,800 native plant species in the region. As a start, staff spent two days in March with experts from DOC, Te Papa and Wellington Botanical Society assessing the regional status of nationally threatened plant species.

Our Terrestrial Ecologist has been involved in the ongoing development and use of the New Zealand eBird database for recording birds in the Wellington region. This database is a global citizen science enterprise initiated by the Cornell Lab of Ornithology and aims to create a tool to capture the vast quantities of bird observations collected worldwide by both recreational birdwatchers and ornithologists. In Wellington, a growing community of 'eBirders' have been adding data to this database and in mid-March passed the milestone of having submitted 10,000 complete bird checklists for the region. The dataset now contains over 52,000 bird records for 167 species and is currently growing at around 1,000-5,000 records per month. The information generated will prove valuable to researchers, conservation managers and policy-makers in future and has already proved useful for the listing of significant bird sites in the draft Natural Resources Plan and for consent assessments.

The banded dotterel nesting investigation in the coastal areas at Parangarahu Lakes and Baring Head in East Harbour Regional Park has now been completed. This project has taken place over three nesting seasons and has made use of digital ‘trail’ cameras to film nests and identify the causes of nest failures. Hedgehogs were identified as the main culprit and trapping to control these pests and cats was put in place in the second year, resulting in a seven-fold improvement in nesting success. This year, it was found that the rahui at Parangarahu Lakes and the fencing at Baring Head have successfully prevented nest failures caused by disturbances from people, vehicles and dogs, but that predators are still having impacts on nesting success.

Our Senior Environmental Officer is undertaking a bat survey for WCC. Bat detectors have been installed at sites in Makara and Otari-Wilton’s Bush. Khandallah Park and other locations near Zealandia will also be checked for the presence of bats.

The Team Leader Terrestrial Ecosystems and Quality has attended further meetings of the Biodiversity Working Group and the EMaR Biodiversity project team. The biodiversity indicators developed through the Biodiversity Working Group are now starting to be used by the EMaR Biodiversity project team. Statistics New Zealand is taking an interest in this work as part of their increasing role in environmental reporting.

Hydrology

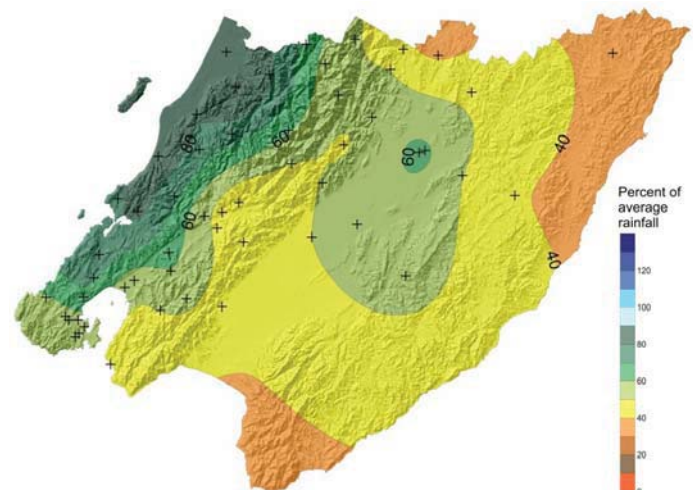
The figure to the right details the rainfall that occurred during the 2014/15 summer season as a percentage of the long term average. Rainfall was below average over the entire region. An east to west trend existed with the eastern areas relatively drier.

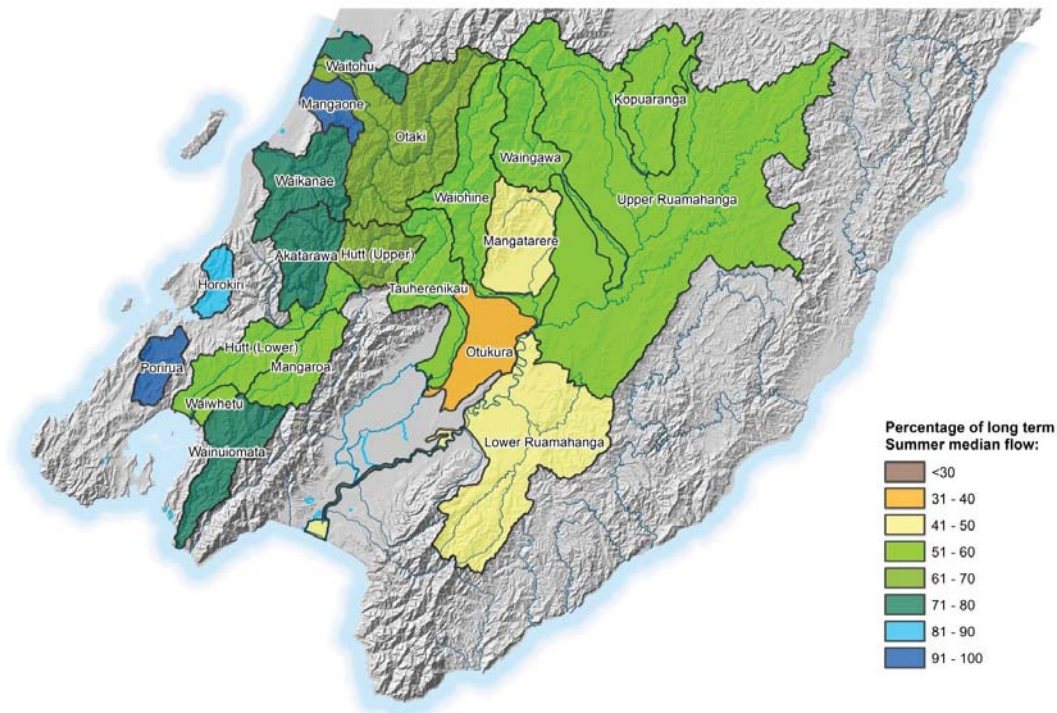
Parts of the eastern hill country received less than 40 percent of what would normally be expected at this time of year, while the Kapiti Coast experienced 80 to 90 percent of normal summer rainfall.

River flows were generally quite low and a number of rivers and streams recorded very low flows towards the end of summer.

In the Wairarapa, the Waiohine and Tauherenikau rivers reached minimum flows that are only expected every 8-9 years. The Ruamahanga River at Waihenga (Martinborough) fell to a low flow expected only once every 10 years.

The median summer river flows in some of our monitored catchments are compared to long-term median flows in the map below. All catchments had median summer flows below what is normally expected. Only the Mangaone and Porirua streams recorded above 90% of normal. The entire Wairarapa recorded median flows that were less than 60% of normal





Median river flows during summer 2014/15 (Dec-Feb inclusive) for catchments in the Wellington region

Monitoring

Work has almost been completed on the benchmarking of all groundwater, surface water, lake level, wetland level, tide and rainfall monitoring sites. The aim of this exercise is to be able to quantify the quality of the data being collected by this extensive network of sites with regard to the National Environmental Monitoring Standards (NEMS). This will enable us to provide a clear description to end users of the confidence we have in the data's ability to represent the natural environment.

The extended dry period as described above has kept the monitoring team busy measuring flows in most of the rivers and streams across the region. The low flows resulted in many water take consent restrictions being enforced by the Environmental Regulation department. These decisions are based on the information provided by the hydrology team and the team must manually measure sites regularly to ensure the automatic recorders are correct, and frequently measure sites with no automatic recorders. This work is particularly important in relation to the major public water supply consents such as that for the Kapiti Coast.

Four staff from ESci attended the Hydrological Society Technical Workshop in Greymouth in March. This workshop is focused on the technical and field aspects of hydrological data collection and is an excellent forum for sharing ideas and solutions to problems. The day prior to the workshop was spent on the banks of the Dilmanstown Canal undertaking a comparative river gauging exercise organised by NIWA and West Coast Regional Council. This was a very useful opportunity for comparing methods for measuring river flows and comparing results with teams from across the country in a relatively controlled environment.



ESci staff using an ADCP to gauge the Dilmanstown Canal (Kumara)



Comparative gauging exercise on the Dilmanstown Canal (Kumara)

Investigations

Science staff have spent a lot of time on work related to the development of the Natural Resources Plan. This included running a day long science workshop for some of the main stakeholders in the Wairarapa. This was a very useful exercise for working through some of the main issues that have arisen through the submissions process. The other major area of work has been the scoping and planning of the Hydrology Component of the Collaborative Modelling Project.

Drought conditions in the Wairarapa prompted the formation of the Drought Committee to coordinate responses to the conditions. ESci Hydrologists were present at committee meetings and provided up to date information on the weather and hydrological conditions throughout the event.

Over the summer period two flow gauging investigations were successfully completed. The first involved measuring flows over a number of days down the length of the Ruamahanga River and its tributaries in order to bolster the data set that will be used for low flow model development. The other project involved correlating flows in the ungauged spring-fed Waimanu Stream (Otaki) with the existing flow recorder site on the Waitohu River in order to provide a mechanism for controlling the two consented takes on the Waimanu Stream.

As has been mentioned in previous reports, the time-lapse camera project on the Ruamahanga continued throughout the summer and a great deal of useful data has been collected. This information will be used to demonstrate visually the effects of different water allocation regimes on the river. This may be a useful tool for the whitua committees.

Science strategy and information

There has been a significant amount of work involved in coordinating the necessary science input to the Natural Resources Plan and Ruamāhanga Whitua, and preparing science information for the recently formed Te Awarua o Porirua Whitua Committee.

Particular emphasis has been on the ongoing management and coordination of the Collaborative Modelling Project – which will ensure that we have all the necessary knowledge and expertise required to answer the various questions that the whitua are likely to have about land use and impacts on water quality. This is proving to be a leading example of a collaborative knowledge-development process involving a number of GWRC staff, 30 external scientists and iwi.

Our Senior Science Coordinator has been coordinating the department's ongoing review of its SOE monitoring programmes, which has included initiating conversations with other GWRC departments to identify their monitoring needs. The initial focus is on developing the requirements for what is required for "baseline" environmental monitoring at a regional level. Once that has been defined, we will look at what is required to meet other monitoring needs or questions.

Our Senior Science Coordinator has also been involved with several interdepartmental pieces of work including:

- ▶ The development of an organisational research strategy
- ▶ The review of the environmental indicators for the Wellington region's Genuine Progress Index (GPI)
- ▶ The completion of MOA's with Wellington Water and the Biodiversity department

There continues to be a strong focus on science communications. During the quarter we:

- ▶ Completed a draft communications plan for the department (and are now working with the Communications department on a work plan for the 2015/16 year)

- ▶ Completed the content 2013/14 Annual Summary Report, which is now in the design phase and is due to be published in the next quarter
- ▶ Made improvements to the recreational water quality information on our website, including the new interactive map which displays both overall grades and current warnings for our monitored swimming sites
- ▶ Contributed to several popular publications, including a brochure for farmers called “Reducing impacts of winter grazing on soil and water quality”
- ▶ Contributed to the development of a report called “Aquatic ecosystem health and contact recreation outcomes in the draft Natural Resources Plan – Benchmarking report” which highlights how our region’s waterways stack up in terms of ecosystem health and suitability for recreational activities
- ▶ Continued to be involved with LAWA, most recently the collation and development of data and material for the new hydrology module

The fourth meeting of the external Science Leaders Group is planned for May 2015 and the focus will be on furthering a partnership with iwi in science and starting to look at potential cultural health indicators.

Significant projects

Wairarapa Moana

ESci continues to play a key role in the Wairarapa Moana project and is heavily involved in the FreshStart for Freshwater Programme. Several staff are part of the Technical Advisory Group and we are involved in all three arms of the project; lake-edge wetland restoration, Land Environment Plans and monitoring.

In collaboration with Ian Gunn (Catchment Management) and Tony Silbery (DOC, Wairarapa), the Team Leader Terrestrial Ecosystems and Quality presented a paper at a recent Ramsar¹ Symposium held in Hamilton. The presentation described our experience in applying for Ramsar status for Wairarapa Moana, which has taken many years and the input of many people. The application is now quite advanced and if successful, Wairarapa Moana will be the first New Zealand site in ten years to achieve Ramsar status.

Several staff also took part in a Wairarapa Moana knowledge gaps workshop organised by DOC (Wairarapa branch). The session identified future monitoring and research needs and is to form part of the management plan for Wairarapa Moana for the next three years. Staff were able to have input to the pest control programmes, and the learnings from the research that has been carried out in recent years had a strong influence on the management actions formed.

The exotic fishing regime for Barton’s Lagoon was adapted in order to lower exotic fish numbers more effectively. During the last quarter, one night's fishing was completed every two weeks for six

¹ The Convention on Wetlands, called the Ramsar Convention, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

weeks, then every three weeks for nine weeks. Over those six fishing nights a total of nine trout, 17 perch and 83 rudd were caught. A clear pattern of decreasing exotic fish biomass is now being seen.



Total biomass of exotic fish species removed from Barton's Lagoon over 18 months

Ruamāhanga Whaitua

As reported last quarter, a number of projects have been started which will provide the science information the committee is likely to require over the coming months. These projects are being coordinated by the SSI team, and are largely around providing information on the current state of our environment, trends, key issues and drivers of those.

To date a number of presentations and papers have been provided to the committee on the state of our environment, current trends and contaminant inputs to the catchment.

A major piece of work has been around the development of the Collaborative Modelling Project (CMP). This project is developing a knowledge framework which will ensure that we have all the necessary knowledge and expertise required to answer the various questions that the whaitua are likely to have about land use and impacts on water quality. In particular, it will explore how to utilise existing models for scenario testing of various land uses and their impact on water quality. A number of workshops have been held with modellers and experts from around New Zealand to develop this framework. Once established, the framework will be able to be used across all the whaitua.

Technical support for other departments and Wellington Water

Considerable technical support was provided to other GWRC departments/groups during the quarter:

Environmental Regulation

- ▶ Ongoing consent application advice has been provided for NZTA's MacKays to Peka Peka and Transmission Gully roading projects, including assessment of remediation plans for contaminated sites and technical input on marine monitoring
- ▶ Technical advice was provided on a number of small consent applications and also on applications for replacement consents for discharges from the Wainuiomata Water Treatment Plant

- ▶ Pre-application discussions continue with regard to marine sampling methods proposed by CentrePort for their harbour dredging project
- ▶ Assistance was provided in updating the 'allocation calculator', a tool which tracks the combined impact of consented allocation in the Wairarapa Valley
- ▶ Site visits to Best Farms and Duck Creek to appraise and provide advice on mitigation planting

Environmental Policy

- ▶ Work continued on the provision of technical information in support of the Natural Resources Plan (NRP) which included:
 - » An analysis of the security of supply for irrigators in the Wairarapa
 - » A stream depletion analysis to assist with water allocation policies
 - » Defining capture zones for groundwater drinking water supplies
 - » Completion of report called "Aquatic ecosystem health and contact recreation outcomes in the draft Natural Resources Plan – Benchmarking report" which highlights how our region's waterways stack up in terms of ecosystem health and suitability for recreational activities
 - » Provision of technical responses to stakeholder feedback received on the draft NRP
- ▶ Our terrestrial ecologist published a report on the coastal and freshwater habitats of significance for indigenous birds in the Wellington region

Flood Protection

- ▶ Aquatic ecosystems and quality staff completed a survey of fish and invertebrates at several sites along the Waiwhetu Stream during late January. This was at the request of Flood Protection and was a repeat of a survey carried out over 12 years ago. A total of eight indigenous fish species were recorded and koura (freshwater crayfish) were also present. Three fish species (koaro, longfin eel and giant bully) were not found during the original survey although we cannot say with certainty whether this represents an overall change in the fish community
- ▶ Aquatic ecosystems and quality staff have been working with Flood Protection on scoping a monitoring project to assess the effects of in-stream river works on sediment discharges and toxic algal growth; however, the river works earmarked for monitoring have been delayed until the next financial year. A presentation on toxic algae was also given to Flood Protection staff to improve their understanding of toxic algae in the Hutt River
- ▶ Hydrology staff are continuing to work closely with Flood Protection in scoping options for the enhancement of flood models for short-term event predictions
- ▶ The annual survey of river birds on the Hutt, Waikanae and Otaki rivers were completed

Biodiversity

- ▶ Aquatic ecosystems and quality staff provided technical support for the Biodiversity department's consent application to spray diquat on exotic weeds at Gollans Wetland, Lake Kohangatera and Wainuiomata River wetlands. If spraying proceeds this autumn as hoped, ESci staff will carry out environmental monitoring associated with the spray operation
- ▶ Aquatic and terrestrial staff provided logistical help and presented to the public on the fish communities at the Wairarapa Moana wetlands field day held in March
- ▶ Ecologists continue to provide feedback on Key Native Ecosystem (KNE) plans and advice as requested

- ▶ Sixteen KNE sites were monitored for the presence of rodents and small mammals in February. Rat tracking in Wainuiomata Mainland Island has fallen from a record 83% to 35%, but is still well above the target level of 5%. Rat levels are at or below 10% at all other sites, except for Johnsonville Park (30%), Long Gully (15%), Korokoro Valley (15%) and Porirua Scenic Reserve (10%). Hedgehogs are still high at Baring Head (tracking over 80%), while mustelids were detected on all lines in the mainland island in East Harbour Regional Park
- ▶ The preparation and distribution of a factsheet on rodent and small mammal monitoring at Baring Head has successfully encouraged more volunteers to take part in the quarterly monitoring at that site
- ▶ One of our freshwater scientists gave a presentation to Biodiversity staff on the health of Lake Waitawa, with a particular focus around its algal bloom issues. Lake Waitawa forms part of a KNE site on the Kapiti Coast

Parks

- ▶ Ecological assessments of the impacts of track upgrades were made at three sites; the Devil's staircase in Akatarawa Forest, East Harbour Kowhai Street and Bus Barn Track in East Harbour Regional Park
- ▶ ESci has assisted the volunteer group MIRO in completing robin searches in the mainland island. Nine robins were detected by the volunteers and fledging of three chicks from a nesting pair was recorded

Biosecurity

- ▶ Staff have provided two possum monitoring designs and 13 reports for Bioworks (Wairarapa) in the last quarter

Wellington Water (previously Water Supply department)

- ▶ Following an aerial survey of water collection areas to check for introduced insect and fungi damage in December, follow-up ground surveys were undertaken at selected sites. Samples of insects and/or fungi were taken from two of the six sites visited
- ▶ A memo was prepared with recommendations about possible changes to existing water quality and ecological monitoring required under Wellington Water's consents to abstract water from the Hutt River. An assessment of nutrient monitoring data collected by Wellington Water was completed as part of this work

Staff changes

Our recently recruited climate scientist, Alex Pezza from Melbourne University, started work with GWRC on 16 February 2015. This new role is responsible for developing a climate science programme designed to inform council wide climate-sensitive decision making and to provide a forward looking focus for resource management planning.

We are currently recruiting for a Science Coordinator to support the Te Awarua o Porirua whaitua committee.

Financial reports

Science Income Statement Period ending 31 March 2015	31 March 2015			Full Year			31 March 2014	
	Actual \$000	Budget \$000	Variance \$000	Forecast \$000	Budget \$000	Variance \$000	YTD Actual \$000	FY Actual \$000
Rates & Levies	4,031	4,030	1	5,373	5,373	-	3,784	5,045
Government Grants & Subsidies	-	-	-	-	-	-	-	-
External Revenue	111	8	103	205	10	195	17	39
Investment Revenue	3	-	3	-	-	-	3	4
Internal Revenue	161	184	(23)	245	245	-	202	320
TOTAL INCOME	4,306	4,222	84	5,823	5,628	195	4,006	5,408
less:								
Personnel Costs	2,356	2,040	(316)	3,070	2,720	(350)	2,060	2,804
Materials, Supplies & Services	257	154	(103)	205	205	-	224	308
Travel & Transport Costs	101	62	(39)	82	82	-	88	104
Contractor & Consultants	645	797	152	1,576	1,063	(513)	594	874
Grants and Subsidies Expenditure	-	-	-	-	-	-	-	-
Internal Charges	440	359	(81)	477	477	-	418	607
Total Direct Expenditure	3,799	3,412	(387)	5,410	4,547	(863)	3,384	4,697
Financial Costs	13	12	(1)	16	16	-	12	17
Bad Debts	-	-	-	-	-	-	3	(2)
Corporate & Department Overheads	640	640	-	853	853	-	578	770
Depreciation	188	196	8	261	261	-	203	267
Loss(Gain) on Sale of Assets / Investments	-	(5)	(5)	(5)	(5)	-	-	-
TOTAL EXPENDITURE	4,640	4,255	(385)	6,535	5,672	(863)	4,180	5,749
OPERATING SURPLUS/(DEFICIT)	(334)	(33)	(301)	(712)	(44)	(668)	(174)	(341)
Add Back Depreciation	188	196	(8)	261	261	-	203	267
Other Non Cash	-	(5)	5	(5)	(5)	-	-	-
Net Asset Acquisitions	(142)	(158)	16	(188)	(292)	104	(53)	(102)
Net External Investment Movements	-	-	-	-	-	-	-	-
NET FUNDING BEFORE DEBT & REVENUE	(288)	-	(288)	(644)	(80)	(564)	(24)	(176)
Debt Additions / (decrease)	18	87	(69)	116	116	-	13	68
Debt Repaid	(31)	(27)	(4)	(36)	(36)	-	(52)	(64)
Net Reserves (Increase) / decrease	(3)	-	(3)	-	-	-	(3)	(4)
NET FUNDING SURPLUS (DEFICIT)	(304)	60	(364)	(564)	-	(564)	(66)	(176)

Science Capital Expenditure Statement Period ending 31 March 2015	31 March 2015			Full Year			31 March 2014	
	Actual \$000	Budget \$000	Variance \$000	Forecast \$000	Budget \$000	Variance \$000	YTD Actual \$000	FY Actual \$000
Total Asset Acquisitions	124	95	(29)	200	200	-	38	52
Capital Project Expenditure	18	87	69	12	116	104	13	48
Asset Disposal Cash Proceeds	-	(24)	(24)	(24)	(24)	-	-	-
Net Capital Expenditure	142	158	16	188	292	104	51	100

Financial variance analysis

- ▶ E Science has a net deficit of \$334 which is \$301k worse than budget
- ▶ Staff costs are \$316k more than budget mainly due to unbudgeted casual monitoring staff and early recruitment of staff to meet science requirements of the Whaitua Committees. The forecast has been updated by \$350k for these staff as the costs are ongoing
- ▶ External spend on materials, travel & consultants costs are \$10k under budget at March but the forecast has been increased by \$513k for projects such as the Collaborative Modelling project \$375k and MBIE project \$100k which started in January

- ▶ Internal costs are overbudget by \$81k, most of which is ICT charges due to more computers and gadgets than budgeted
- ▶ The capital spend to date is on replacement data loggers and nitrogen analysers for monitoring sites. A vehicle has been ordered but not delivered yet so no spend to date

Performance Measure	Performance Target		Comment
	Baseline	2014/15	
Number of state of the environment report cards downloaded on the Greater Wellington website	1929 (2010/11)	Increase on previous year	This information is not currently available.

Risk analysis

Increased communication has been occurring between TA's and ourselves in response to three sites now meeting the remediation fund top 10 criteria.



greater WELLINGTON

REGIONAL COUNCIL

Te Pane Matua Taiao