

Te Upoko Taiao Natural Resource Management Committee

1. Environmental Policy

1.1 Overview

- Continuation of the development of the second generation regional plan, including stakeholder workshops
- Final Environment Court mediation on proposed Regional Policy Statement
- Work underway to make the RPS operative – the timing is dependent on the Environment Court's turn around of consent orders

1.2 Key results

- The final appeal points on the Regional Policy Statement were resolved by mediation in this quarter, and all consent orders are now signed or filed with the Environment Court for signing
- Those draft consent orders which are still with the Court cover: tangata whenua, landscape, indigenous ecosystems, natural hazards, energy and infrastructure
- Work is underway to make the RPS operative – the timing is dependent of the Environment Court's turn around of signed consent orders
- Te Upoko Taiao – Natural Resource Management Committee met on 14 August and 18 September 2012
- Discussed at the August meeting were the taking, using, damming and diverting of water including water allocation, as well as further discussion on the 'Land and Water Framework'
- At the September meeting the June Quarterly Report from the Environmental Management Group was presented. A workshop was also held where the committee discussed rural land use provisions for water quality including a presentation on the agricultural software program OVERSEER© from Fert Research

1.3 Looking ahead

- Te Upoko Taiao will further examine policy development options around hazard management, and management of the coastal marine area. To be discussed later this year will be the management of urban water quality, earthworks, forestry, landfills, historic heritage and sites of significance to iwi

- Preparing to make the proposed Regional Policy Statement operative, by editing a final copy for signoff by Council
- Coordinating a full council submission on the Kaptit Coast District Council (KCDC) proposed district plan, which is to be notified late November
- Further development of the land and water management framework (Whaitua concept)

1.4 Departmental activity

Proposed Regional Policy Statement

- All consent orders in resolution of the Regional Policy Statement appeals are either now signed by the Environment Court, or filed and awaiting signing which is likely to take between 2 to 6 months
- While waiting for these last consent orders, officers are working on a project plan to make the proposed Regional Policy Statement operative. Editing and cross checking are in progress

Regional Plan review

General

Te Upoko Taiao – Natural Resource Management Committee met on 14 August and 18 September 2012

At the August workshop the committee discussed provisions for the taking, using, damming and diverting of water, including water allocation. The approach to establishing ‘region wide’ provisions for environmental flows and the amount of water that can be taken from water bodies was discussed. The overall approach presented by staff was supported.

The approach for incorporating a catchment based, collaborative process for the management of land and water resources and their interactions was further discussed at the workshop. The committee considered a paper and presentation given by Geoff Henley of Network Communications with the assistance of staff from Greater Wellington. Geoff was closely involved in the development of the approach adopted by Environment Canterbury. The committee requested staff to bring back further detail to the 18 September workshop.

Te Upoko Taiao met on 18 September and was presented with the June Quarterly Report from the Environmental Management Group. A workshop followed the meeting where the committee discussed rural land use provisions for water quality including a presentation on the agricultural software program OVERSEER© from Fert Research. Further information was also presented on the Land and Water management, Whaitua committee approach.

The rural land use provisions discussed focussed on the ‘three big’ rural land use activities that can affect water quality – effluent storage and disposal, stock access to waterways and nutrient management. Also covered were the

management of other rural based activities, such as offal pits and farm refuse, compost and silage.

The committee discussed in further detail how a whitua model would be best implemented in the Wellington region.

Individual contracts are being set up with each iwi to identify sites of significance to tangata whenua for inclusion in the new regional plan.

Landowner consultation is occurring for historic heritage sites that are being considered for scheduling in the new regional plan. We are planning a meeting for owners of historic boatsheds around Porirua Harbour in November to discuss the potential implications of scheduling.

A 3-stage project to identify and accurately map regionally significant wetlands is underway. A desktop review was completed in 2010. Field work was carried out for wetlands bordering Wairarapa Moana in 2011, and conversations with landowners are being planned. Field visits to a further 70 wetlands across the region have carried out during August-October 2012. Councillors have been advised of these visits in order to assist with landowner enquiries. The final product of these three projects will be a list of significant wetlands that are candidates for scheduling in the new regional plan.

Two other projects are underway to identify significant estuaries in the region, and sites of significance for indigenous birds in lakes and rivers, wetlands, and the coastal marine area.

Continuing consultation with key stakeholders on rural land provisions for water quality was provided with a science-focussed workshop on 25 September. Presentations by EMI staff were given on soil, groundwater, river and streams, and lake water quality. Consultation on this topic will be followed up with a second policy-focussed consultation on stock access and nutrient management on 16 October.

Consultation and Engagement Plan

The engagement strategy for 2012 has involved two different sets of activities – stakeholder conferencing and public seminars. The stakeholder conferencing has enabled topic leaders to meet with individuals from key organisations, to discuss and develop the approaches to regional plan policies and methods.

Consultation workshops have been held through June to October to address the following topic areas:

- Hazards and coastal hazard management areas
- Management of the coastal marine areas
- Management of stormwater
- Management rural water quality

- Water allocation
- The management of the beds of lakes and rivers

Public seminars are scheduled for November that will give an update to the public on the regional plan process and inform people of possible approaches across key issues under the plan review. Six seminars are being held from 26 November until 6 December. People attending the seminars will be encouraged to provide feed-back via the website. Scheduled just ahead of these seminars are meetings with councillors from the region's Territorial Authorities. These meetings will give an update to councillors on the progress of the plan review and ensure that they are informed of the overall process before the public meetings.

Regional Council input into Statutory Planning

District Plan Changes

Hutt City Council

- Plan Change 29: Petone West – Mixed Use

Greater Wellington submitted in opposition to aspects of Plan Change 29: Petone West-Mixed Use. The submission argued that the plan change failed to take sufficient account of the natural hazards in the Petone West area, including seismic, flooding and coastal process hazards. The submission also addressed the implication for the strategic transport network of the plan change. We await the summary of submissions from the Hutt City Council.

Upper Hutt City Council

- Proposed plan change 15- Natural hazards

The plan change provides new provisions for managing development in high hazard areas and reduces risk to other development. The plan change has been prepared in close consultation with Greater Wellington and incorporates recent information from Greater Wellington Flood Protection department on flood risk on the Hutt River. The framework of the plan change is established for hazard management for other rivers and streams as information becomes available. It gives effect to the hazard policies in the proposed Regional Policy Statement. Greater Wellington will be providing a supportive submission.

Porirua City Council

- Proposed plan change 15 – historic heritage

Greater Wellington made a generally supportive submission on this plan change, which was a full review of the historic heritage chapter of the district plan. The work follows from the Porirua Heritage Management Strategy.

Notified Resource Consents

Wellington City Council

Long Gully Station Trust

The Long Gully Station Trust application is a proposal to go from a previously consented 8 lots to 16 lots, and includes an application to change a previously granted consent notice.

Greater Wellington opposed the subdivision and consent notice changes for two proposed lots on the coast, on the grounds of hazard effects and potential effects on landscape values. We also sought some changes to other aspects of the proposal in relation to effects on indigenous ecosystems, hazard mitigation on the other lots and effects on landscape values.

In response to the submission, the applicant has withdrawn the lots on the coast and agreed to a condition of consent requiring a seismic hazards assessment by a qualified engineering expert before establishing building platforms on the remaining lots. With these undertakings Greater Wellington has withdrawn from appearing at any hearing.

Other documents

New Zealand Historic Places Trust

- Proposed registration of Wellington Harbour Board Historic Area

Greater Wellington made a submission on this proposed registration, which covers a large area of the waterfront, from Pipitea Wharf in the north (fully enclosed by reclamation) to Clyde Quay wharf in the south and the area in between. We currently oppose this registration because of concerns that the proposal would require a substantial area of the coastal marine area of Wellington Harbour to be recognised as a historic area in our coastal plan. We also have technical concerns with the registration report. The Historic Places Trust did not consult with anyone prior to proposing the registration, and many other stakeholders also opposed the registration. Greater Wellington officers met with the New Zealand Historic Places Trust, Port Nicholson Settlement Trust, Centreport, Wellington City Council and Wellington Waterfront to discuss the proposal for registration of Wellington Harbour Board Historic Area.

Natural hazards

Research Projects

Lower Hutt coastal flooding project

This work followed on from the findings of the regional study into coastal hazards and vulnerability. The modelling took into account the latest upgrades to the Lower Hutt stopbank system.

Civil Defence and Emergency Management

Wellington region civil defence and emergency management group plan

The department continues to work with civil defence emergency management. CDEM has recently been amalgamated into a regional group and is in the process of developing a regional CDEM plan. Environmental policy will be working with the regional CDEM group during the preparation of this plan and providing regional hazards and planning advice.

2. Environmental Regulation

1.1 Overview

- Moderate core statutory workload. This quarters work was dominated by RoNS projects and municipal waste water treatment renewals
- Non notified consent workload stable, and down on the 2011/12 September quarter
- Compliance inspection load comparable to the 2010/11 September quarter, and steady load of prosecutions and other enforcement proceedings

1.2 Key results for the year

- Roads of National Significance – Significant workload in MacKays to Peka Peka, Basins and Peka Peka to Otaki national consenting processes
- Significant appeals work in Castle Hill Wind Farm and Carterton municipal waste water
- Municipal waste water – ongoing replacement consenting across the region, for main plant and infrastructure overflows South Wairarapa and Hutt Councils
- Development and roll out of a pilot programme to contract out earthworks resource consent compliance
- Ongoing enforcement actions being heard in the High Court in the Burrells and Jefferies cases
- Commencing roll-out of dairy effluent pond storage calculator

1.3 Looking ahead

- Ongoing management of core statutory work with particularly heavy loads in water permit compliance, earthworks compliance, and RoNS project and Board of Inquiry work
- Review of existing compliance strategies, linked together by an overarching strategic compliance framework
- Stakeholder engagement including the Earthworks industry (contractors and consultants), and further work with rural sector agencies
- Regional Plan review input, incorporating significant input into plan provisions

1.4 Departmental activity

Resource consents

Non-notified consents

Non-notified consent processing work has remained stable in the September quarter, and as with the June quarter is dominated by the ongoing processing of replacement consent applications for water takes, dairy sheds, swing moorings and the remaining boatsheds from 2011; as well as a number of bore permits.

Overall, we are down on actual numbers of consents received processed compared to the 2011-12 September quarter, although the load of moderate and larger consents remains comparable. Additionally, it is worth remembering that these statistics take no account of the load generated by national consenting applications to the Board of Inquiry.

Consents summary

Item	Sept Quarter 2012	June Quarter 2012	Sept Quarter 2011
Consents received	102	104	137
Consents issued	99	107	173

Item	2012-13 year to date	2011-12 year to date	2011-12 year
Consents received	102	137	506
Consents issued	99	173	575

Item	Sept Quarter 2012	June Quarter 2012
Median processing time frame	17	17

Item	2012-13 year to date	2011-12 year
Median processing time frame	17	17

Notified and limited notified consents

Moderate work in assessments, and pre-hearings or hearings has been completed and/or decisions released on:

- **NZTA – MacKays to Peka Peka RoNS (M2PP):** The M2PP project was publicly notified by the EPA on 14 July 2012. GW has formally submitted on the applications, following on from our formal regulatory role for Board of Inquiry (providing a ‘post lodgement completeness check’ and a ‘key issues’ report). Our submission provides general support for the proposal, but has identified a number of concerns in the areas of ecology,

biodiversity, flood protection, groundwater hydrology and effects on Queen Elizabeth Park. The approach taken mirrors the cross-organisation submission process taken for the Transmission Gully process. Ten statements of evidence have been prepared in support of GW's submission – indicating a greater and more diverse number of issues for GW by comparison to the Transmission Gully process. The hearing will commence on 12 November 2012 and is programmed to extend into January 2013. The process up until the hearing will enable current discussions with NZTA to occur through formal experts and non-experts conferencing sessions – in order to resolve matters of difference where possible. Again this part of the process has a very similar structure to that of the Transmission Gully pre hearing process.

- **Hutt City Council – waste water treatment plant pipeline maintenance:** This is an application for infrequent temporary discharges of treated wastewater to Wellington Harbour and the Waiwhetu Stream, from maintenance and repair works to the treatment plant's main outfall pipeline (MOP). Last month we held the third pre-hearing meeting for this application. Again, the meeting was very effective with the group discussing possible consent conditions, and reflects some very good work between parties to find a collaborative solution. With some clarification and changes, the submitters were satisfied that the applications did not need to proceed to a formal hearing. We will circulate the final draft of the conditions by mid October and seek that submitters withdraw their wish to be heard.
- **GW Flood Protection – Hutt River Mouth Dredging:** This application was granted last month – without the need for a formal hearing. The applications were for the continued dredging of the Hutt River Mouth to maintain the flow carrying capacity of the Hutt River during floods. In summary, the application is to dredge material from the mouth, process this onshore to remove the finer sand portion, and then dispose of the balance off the Petone foreshore in a delineated disposal area. There was significant technical involvement, principally around the effects this activity could have on the characteristics of Petone Beach, and the effect that the disposed material could have on the seafloor ecosystems. Following a pre hearing meeting all submitters withdrew their wish to be heard. The consent was granted for 35 years with monitoring conditions for the foreshore and seabed. Once again, this process reflects some very good work by the applicant, GW Flood Protection, to operate their existing consent well and effectively engage stakeholders in this process. It is useful to note that by contrast, the processing of the former consent in 1999, involved a lengthy hearing and a number of submitters in opposition, which all the more highlights the success of this process.
- **CDC – Carterton Wastewater Treatment Plant reconsenting:** After reviewing the further information provided, the Hearing Panel released its decision granting consent on 24 August 2012. The decision provides a three year term to CDC enabling discharge of higher volumes of waste water during higher stream flows and wet weather events, but at the same

time not enabling discharges during low flow events. The consents also provide for the installation of an ultra-violet treatment unit to reduce nutrient loading, and requires ongoing investigations (including infiltration/inflow, future treatment options) and monitoring. The applicant has subsequently appealed the decision (see below for more details on the appeal).

- **CDC – Carterton water races reconsenting:** These are replacement consent applications to continue to take water to operate the Carterton district water race system. A pre-hearing meeting was held in August with the applicant and a number of submitters. Overall the meeting was constructive and we have circulated a set of proposed consent conditions for the applicant and submitters to consider. We hope that all parties will agree to consent conditions, and therefore avoid the need for holding a formal hearing.
- **SWDC – Martinborough Wastewater Treatment Plant reconsenting:** A replacement consent to discharge treated wastewater to the Ruamahanga River from the Martinborough Waste Water Treatment Plant was lodged on 10 April 2012 (and subsequently returned as incomplete under s88 of the RMA). The applicant expects to re-submit a complete application soon. The proposal is likely to seek a short term (less than 10 years) to investigate and plan for partial or full land based discharge of treated wastewater. In the meantime a series of staged improvements would be undertaken to improve the efficiency and effectiveness of the current system.
- **SWDC – Featherston Wastewater Treatment Plant reconsenting:** A replacement consent to discharge treated sewage to Donalds Creek from Featherston WWTP was lodged in May 2012. The application is currently on hold seeking further information in particular around the effects of the proposal on Donalds Creek and Lake Wairarapa and how the proposed effects may be better mitigated. We have had a series of constructive workshop sessions with SWDC officers to work through the information requirements for both the Featherston and Martinborough consenting process and to discuss a way forward in a timely manner.
- **NCI Packaging – Discharge to air from a can making and painting operation:** This is an application for discharge to air following an investigation of odours generated from NCI in Upper Hutt, affecting the neighbouring residential area. The first pre hearing meeting was held in September with around 15 people attending. The submitters expressed some very strong views around the impact the odour was having on them. Given this, NCI are looking at options for their plant to reduce the effects of the odour on the community.

Significant Non-notified applications

- **Aotea Block** – Carrus Corporation was granted land use and discharge consents this month for bulk earthworks associated with Stage 11 of the Aotea Development in Porirua – encompasses 12 ha and around 250,000

cubic metres of earthworks. The works will also involve piping and reclaiming around 600m of low quality intermittent stream habitat. To offset the adverse effects associated with loss of stream habitat, Carrus proposes to undertake mitigation in the form of riparian planting totalling 520 metres on the banks of the Kenepuru Stream. In early 2013 Carrus intends to lodge a global consent for the remainder of the development in relation to land use consents and discharge permits for bulk earthworks. This application is likely to be notified.

Major pre-application discussions continue for:

- **KCDC public water supply project:** This is a pending application for a long term water supply strategy for the growing Kapiti Coast District. KCDC will seek consents to increase their current take of water from the Waikanae River for public supply. They propose to mitigate the effects on the river by ‘recharging’ the river with abstracted bore water from an expanded Waikanae Bore Field. Pre-application meetings and advice has been ongoing for this project, and we are currently reviewing their draft application prior to final lodgement. The application when lodged will be publically notified.
- **NZTA – Basin Reserve RoNS:** GW has been contracted by the EPA to undertake completeness checks on the draft and final application documents. To date we have completed draft statutory assessment report, to confirm consenting requirements. The EPA expects that the remainder of the draft application documents will be ready for review by January 2013, and lodged in February 2013.

Resource consent appeals and objections, and declarations

Appeals work has increased in the last quarter, with another new appeal, a declaration application and an objection.

- **Horokiwi Quarries – Fitzroy Bay sand and gravel extraction (jointly processed with applications to Hutt City Council):** On 1 October 2012 the Minister of Conservation, Hon Kate Wilkinson signed the final approval regarding the Restricted Coastal Activity for deposition in the coastal marine area over a term of 15 years.
- **Genesis Energy – Castle Hill Wind Farm:** This is an appeal of the consent decision by both the applicant and some of the submitters opposed to the application, primarily focussing on district council related matters (visual amenity, noise and traffic), along with some minor regional issues (around wording of conditions). The first court assisted mediation session is due for 8 and 9 November 2012.
- **CDC – Carterton Wastewater Treatment Plant re consenting:** As stated above, CDC has appealed the decision. The appeal concentrates on the consent; the prohibiting of discharges to the Mangatarere during low flow conditions; and the monitoring regime. A timetable for the appeal is yet to be set by the Court.

- **Brian Warburton:** A Porirua resident has sought a declaration from the Environment Court in regard to the status of the land and water that flows from a stormwater outlet across Titahi Beach which he submits is River as defined in the Resource Management Act 1991. The Judge directed mediation which we supported, but was rejected by the Porirua City Council and Mr Warburton. We have lead informal mediation between the parties, which was also unsuccessful. The Court has now directed GW and PCC to prepare evidence for a hearing (date not yet set down).

Consented compliance monitoring

- **Mill Creek Windfarm – Makara, Wellington:** The initial construction phase is currently underway for this project, with an access road being built to the site through Spicer Forest in Porirua at the site’s northern end. Works will soon start to widen a stretch of Ohariu Valley Road, with the widened road reaching the core site by the end of February 2013. Currently we are in the thick of management plan approvals, which, following the West Wind project learnings, is progressing smoothly. We are also developing some compliance tracking systems for this project to ensure that the substantial raft of compliance items are met.
- **Exide Battery Recycling Plant Decommissioning:** The decommissioning of the plant continues, with main processing building now resembling an empty shell with the recent removal of the large furnace. The next phase is the removal of some external pipework, for which a dedicated enclosure has been made, with air extracted off this. All lead in air levels monitored at the plant boundary remain well within the consented limits.

Environmental incidents

242 incidents were notified and responded to in the quarter, up from 222 in the previous quarter. A summary breakdown of incidents is reported 6-weekly through the Councillor’s Bulletin.

Enforcement

Abatement and infringement notices

Item	Sept Quarter 2012	June Quarter 2012	Sept Quarter 2011
Abatement notices	24	27	24
Infringement notices	8	16	26

Prosecutions, enforcement orders and abatement notice appeals

Significant prosecutions work in the last quarter includes:

- **Alan Jefferies:** The prosecution of Mr Jefferies and related abatement notice appeals regarding the diversion of Mangaroa River, associated river works and deposition of fill material continues. As noted in the March quarter report, the Environment Court decision confirming the abatement notices was appealed to the High Court by Mr Jefferies. The matter was

heard in the High Court on 3 October 2012 by Justice Williams who reserved his decision. The concurrent prosecution of Mr Jefferies on five related charges will be progressed (via trial by jury) once the appeal is resolved.

- **Alex Burrell and Burrell Demolition Ltd:** Following the dismissal of the appeal by the High Court in June 2012. Mr Burrell then successfully gained leave of the High Court to appeal to the Court of Appeal (and seek a stay of the enforcement order). Justice Williams gave leave for four points to be appealed to the Court of Appeal. The Judge also granted a stay of the Enforcement Order with conditions that the appellant must meet including providing a management plan for the filling operation. The appellant will now need to file his appeal with the Court of Appeal. Earlier, the prosecution related to a breach of resource consent in 2008 at C&D Landfill in Happy Valley Road.

Take Charge programme

The Naenae Industrial area has been identified as the next area of focus for the Take Charge programme as all stormwater from the Naenae area discharges into the Waiwhetu Stream. Take Charge has been working with Environmental Science and Flood Protection during this process.

Work has centred around identifying particular contaminants in the stormwater that can be attributed to certain industry types from the Naenae Industrial area. Businesses, identified as having the potential to discharge contaminants to the Waiwhetu, will be approached to participate in the Take Charge Programme.

The Take Charge Coordinator visited Environment Canterbury to see how they carry out their pollution prevention programme. While there are a number of similarities with the Greater Wellington programme, we are looking at how we can incorporate some of the Environment Canterbury initiatives into the Greater Wellington Take Charge Programme.

The Take Charge Coordinator has also attended meetings of the Porirua Harbour Community Education Group, which is a looking at ways to compliment and enhance the work being undertaken as part of the Porirua Harbour Strategy, to determine possibilities for where/how the Take Charge programme could contribute.

Projects

Roll out of dairy effluent storage calculator for Wellington Region

Since we met with key partners (Fonterra, Dairy NZ, and Federated Farmers) to determine how we collectively roll out this tool, staff have been preparing material to send to dairy effluent consent holders. We have recently met again with our key partners and will be able to report further on the roll out in the December quarterly review.

Contracting out compliance services

We have a pilot programme for contracting out part of our earthworks and forestry compliance programme to Southern Skies Environmental Ltd (Auckland based). We are formalising a contract with Southern Skies and developing resources to support our pilot programme. Southern Skies brings a significant amount of knowledge and practical experience in erosion and sediment control from northern New Zealand to the region – which we expect will be of considerable value to consent holders and their contractors. The pilot programme will be based around our site compliance scoring system, encompassing a range of earthwork sites. We are also using Southern Skies to run an industry training workshop in mid October on erosion and sediment control measures.

Water metering regulations

New water metering regulations for existing water take consent holders start taking effect in November. There are a number of initiatives we have been working on to assist water take consent holder to comply with these regulations. A booklet was produced and distributed to all water take consent holders in May and we are presently working on testing a new Water Use Data Management System that enables consent holders to easily upload water use data directly to GW. We have also met with water meter installers and verifiers to ensure they understand our expectations and provided resources (eg, tamper-proof seals) to help their client comply with the new Regulations.

More recently we have been involved with discussions at a national level with other regional councils about some issues that have come to light with the water meter verification process.

3. Environmental Science

1.1 Overview

- Ongoing development of science options to inform the Plan review process
- Completing the SOE summary reports and six technical reports
- Provision of scientific advice for Wairarapa Moana, Mangaterere, Wairararapa Water use Project and Porirua Harbours
- Restructuring of the Environmental Monitoring and Investigations Department, (now called Environmental Science), to better align with Council needs

1.2 Key results for the year

- Year long water quality programme completed in the Pahaoa River catchment
- Selected Land Use Register (SLUR) now available on GIS viewer on the GW website

- Sediment quality survey undertaken in Wellington harbour – joint process as finalised by a MOU with the Wellington City Council
- Ongoing monitoring and investigations in the Porirua Harbour catchment, in part to support the actions identified in the Porirua Harbour and Catchment Strategy and Action Plan launched in April
- Completion of a series of State of the Environment (SoE) technical reports on air, land and fresh and coastal water resources

1.3 Looking ahead

- Consideration of the National Objectives Framework, LAWF third report and National Monitoring and Reporting information into the strategic direction of the science programmes
- Continued development, and release of reports around minimum flow investigations in a variety of rivers across the region, and including lake Wairarapa
- Wairarapa Moana ‘cleanup’ program on science information needs and ongoing performance monitoring

1.4 Departmental activity

General

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

- Completion of a series of technical reports documenting current state and trends in the region’s air, land and fresh and coastal water resources. These detailed reports are only compiled every five – six years and involved a considerable amount of staff time. The reports, summarised for the general public in a folder of leaflets that presented the key findings on a sub-region basis, were publicly released on Friday 15 June and were the front page feature of the Dominion Post. The posting of the leaflets and reports on Greater Wellington’s website coincided with the release of a ‘landing page’ for ESci department’s core monitoring and investigations work, as well as completion of minor upgrades to existing environmental reporting pages.
- Completion of a final report documenting revised Suitability for Recreation Grades for the region’s fresh and coastal recreational waters
- Continuation of extension work – including the development of a new groundwater model – to re-define groundwater zone boundaries on the Kapiti Coast, taking into account areas of surface and groundwater interaction
- Provision of a range of technical support to Environmental Regulation, Environmental Policy, Biodiversity, Biosecurity, Land Management and Flood Protection departments

A summary of work carried out in all subject areas follows.

Air quality and climate

During this winter there were four breaches of the National Environmental Standard (NES) for PM10 recorded at the Masterton air quality monitoring site (ie, four exceedances of the NES plus one permitted exceedance). The winter period had a relatively high number of days which were not conducive to air pollution dispersion (ie, low overnight wind speeds and temperature inversions). These breaches were notified in the Wairarapa Times as required by the NES.

Tamsin Mitchell is the representative from Environmental Science on the new internal Air Quality Working Group which also includes a representative from Environmental Regulation and Environmental Policy. The purpose of the working group is to share information and co-ordinate air quality related projects across Environmental Management, Greater Wellington.

Contaminated land

Staff have instigated many upgrades to the Selected Land Use Register (SLUR) in association with ICT staff. Upgrades completed include:

- Improvements to the data generation process for property information to help minimise property data differences between applications
- Corrections to the property data generation process on the public website to match the database
- Upgrades to include all Hazardous Industry and Activities List (HAIL) listings per site on the public website (previously only one HAIL was able to be listed)
- Creation of a "released" check-box to enable new sites to be drafted prior to going live on the website, upgrade of shapefiles updates received from Upper Hutt City Council
- Launch of the SLUR Landinfo3 application directly from SLUR Access database
- Improvements to filing of potential new SLUR sites, and
- Upgrades to the TA extranet portal

Upgrades commenced and in progress include new enquiry letter upgrades being implemented into the IT system, review of all SLUR shapefiles by ICT and the ESci team for correct placement, and review of sites with no shapefiles.

Staff completed SLUR enquiry response letters to 81 SLUR requests. Staff completed 68 data entries/modifications to SLUR entries.

Soil quality

In response to enquiries relating to the July release of SOE monitoring results and a presentation to stakeholders, staff have followed up on the potential differences in soil phosphorus levels between regional council SOE monitoring and on-farm soil fertility monitoring by the fertiliser industry. Several differences are now known to occur including subtle differences in lab

methodology, some of which were discussed at the August Land Monitoring Forum. Such differences are of interest to soil quality staff at other regional councils, so the issue is being investigated (particularly what this means for interpretation comparing industry results) with further follow up and clarification in conjunction with staff from other regional councils.

Water quality and ecology

(i) Rivers and streams

Water samples were collected from a number of tributaries and drains around Lake Wairarapa during August as part of the lake water and nutrient balance investigation (see Hydrology investigations for further details).

(ii) Lakes

From July, routine monitoring of water quality in Lake Wairarapa was increased from quarterly to monthly intervals. This change in sampling frequency will help improve our ability to detect changes in lake condition over time and follows a recommendation in a technical report released earlier in the year documenting state and trends in the health of the region's lakes.

(iii) Estuarine and marine waters

Final reports were received from Wriggle Coastal Management Ltd documenting ecological assessments of intertidal estuary health undertaken in the Waikanae, Hutt and Whareama estuaries, as well as Porirua Harbour, in February 2012.

Work commenced looking at the results of laboratory analyses of sediment chemistry from the Wellington Harbour subtidal sediment survey, completed last November. There were substantial delays due to weather at the time of the survey and subsequent equipment problems during analyses. A final report on the benthic invertebrates collected during the survey was received in late September.

ESci science staff together with GW Biodiversity staff, continue to work with the Porirua City Council (PCC) and the other agencies involved in developing and implementing the Porirua Harbour and Catchment Strategy and Action Plan. During the quarter this included a meeting to discuss the initial results from PCC's stormwater-related monitoring in the catchment and a presentation on stream and harbour water quality to PCC councillors in mid September. Work also continued on the collation of land use practice information (specifically resource consents for earthworks) needed to refine NIWA's 'source to sink' sediment transport model for the harbour. Associated with this work, ESci monitoring staff undertook several wet weather stream sampling events and completed installation of continuous turbidity sensors and automatic sampling equipment on the lower reaches of Porirua Stream. Unfortunately recent vandalism of the equipment at the site has set back the data collection process.

In September, our coastal scientist, along with GW Biodiversity and Harbours staff, attended a workshop organised by MSA to undertake an environmental risk assessment for marine waters in the Wellington region. The workshop involved listing marine sites of significance in the region and developing criteria against which these sites could be prioritised in the event of an oil spill.

(iv) Recreational waters

The 2011/12 summer recreational water quality monitoring programme ended on 31 March; the results of the summer's monitoring were reviewed during the quarter and are currently being summarised in the annual *On the Beaches* report. Completion of this report is expected in late October.

In consultation with ESci, territorial authorities and Regional Public Health, the GW communications team has drafted a toxic algae communication strategy for rivers in the Wellington region which was accepted at an inter-agency meeting in September. The strategy includes actions for all organisations involved and regular meetings throughout the summer. In addition, the existing toxic algae warning signs have been revised and are due to be printed for use in the upcoming summer bathing season.

(v) Groundwater

Water samples were collected from shallow piezometers around Lake Wairarapa during August as part of the lake water and nutrient balance investigation (see Hydrology investigations for further details).

Biodiversity

Landcare Research NZ Ltd have been contracted to complete an estimate of the sampling effort required for Biodiversity State of the Environment reporting purposes by the end of October. Work on a short SOE monitoring report on terrestrial biodiversity is underway. Changes in landcover classes, extent of legal protection and a number of other variables are being analysed for use in the report. Ten permits for natural use collection or research on Greater Wellington's parks and forests have been processed. Four of those were high impact permits, one of which was for catching birds to complete research on genetic variability in long-tail cuckoo.

An investigation at Pencarrow and Baring Heads to monitor the nesting success and causes of nest failure in banded dotterel (nationally threatened) colonies has shown that hedgehogs are involved in causing nest failure. The video from the motion-activated infra-red cameras showed hedgehogs eating the banded dotterel eggs at two sites. Wild cats have also been filmed near the nests, but have so far not been implicated in the loss of eggs. Cameras were only set up at two of twelve nests located. To date nine of the twelve nests have failed. This trial will continue until the end of the dotterel breeding season (Jan/Feb).

The mean number of kereru recorded this year in the September monitor on Kaitoke Regional Park was 121 birds. This result was lower than last year's mean of 140 kereru, but indicates the health of the forest and the size of the flocks that can be seen in the park during spring (153 birds in one of the

counts). The hinau fruitfall plots in East Harbour Regional Park were re-measured with the assistance of the MIRO volunteers. No possum damage and only 7% rodent damage to the fruit was recorded, which shows that pest numbers are low. A rodent monitor was completed in the Hutt Water Collection Area in September as part of Project Kaka, but the results have not been analysed as yet.

Hydrology

Winter rainfall was slightly below average in the central parts of the region (Tararua Range, Hutt Valley) and slightly above average across the Wairarapa Valley and in pockets on the Kapiti Coast and around Wellington city. However, rainfall totals in these areas were typically well within 20% of long term averages for winter. The southeastern part of the Wairarapa was an exception and received well above average winter rainfall; (up to 150% of the norm in places). Winter was, for the third year running, fairly benign with respect to river flows; no significant widespread or damaging events occurred in the region.

A key science focus for the July–Sept quarter was compiling a first draft report on a Kapiti Coast groundwater model. The annual hydrology monitoring report for 2010/11 was also completed and published.

(vi) Water allocation investigations

A report documenting the development of a revised numerical groundwater model for the Kapiti Coast was completed (in first draft form) and issued for external peer review in September. This report is a milestone in a broader project aiming to revise the groundwater allocation volumes for the Kapiti Coast as part of the regional plan review. The report documented a review the hydrogeology of the Kapiti Coast, a conceptual integrated surface water-groundwater allocation framework (that is similar in principle to the proposed conjunctive management framework for water resources in the Wairarapa Valley) and the subsequent development of a dynamic 3-D transient state numerical groundwater model. Model development and calibrations have been done in-house with the assistance of two consultants in model conceptualisation and derivation of input parameters for model construction and calibrations. The next stage of work is to analyse different groundwater allocation scenarios.

(vii) Hydrology investigations

Work continued through autumn to gather data for investigating the water balance of Lake Wairarapa. This is needed to inform the review of water allocation policies, among other management actions. In addition to the two lake shore meteorological stations installed over 2011/12 summer, a central lake station has been designed and resource consent for installation has been sought. Discussions about this consent are underway with iwi representatives in the Wairarapa and the necessary approvals have not yet (as of the end of September) been received. Installation of a sideways-looking acoustic doppler unit at the lake outlet channel was completed. This unit provides a continuous measure of flow in and out of the lake and initial calibrations have been very

promising. Several days were spent by monitoring staff in late August sampling all major lake tributary inflows and shallow groundwater sample points to capture typical 'winter' conditions with respect to flows, levels and water quality. This exercise will be repeated in the future to help build a picture of hydrological influences on contaminant loading as well as improve our understanding of the water balance under different climatic conditions.

A site has been identified on Booths Creek (near Carterton) for installation of a long term flow monitoring station. The station will help GWRC manage abstraction consents in this stressed catchment and also improve our understanding over coming years of the low flow hydrology; this will assist in developing longer term catchment management strategies.

Other significant projects

(i) Wairarapa Moana

The Environmental Science department plays a key role in the Wairarapa Moana project and is heavily involved in the FreshStart for Freshwater Program. Members of the Terrestrial and Aquatic Ecology and Quality Teams are part of the Technical Advisory Group and involved in all three arms of the project; the Lake-edge wetland restoration, Land Environment Plans and Monitoring.

The Lake edge wetland restoration group have agreed a pest plant control program and priority actions for each of the six selected wetlands. Officers have contracted a NIWA expert to assist with determining the best way to create wetlands to improve water quality outcomes in the edge wetlands. Opportunities to improve the filtering of nutrients at Barton's Lagoon, Matthews Wildlife Reserve and the Wairio Block (Duck's Unlimited area) are currently being investigated. Staff have liaised with Victoria University students who are interested in completing research on some aspects of this project. An exotic fish removal trial has also been scoped for Barton's Lagoon.

Surface water samples were collected from the inflows and outflows from Matthew's and Barton's lagoon systems in September, to provide information about the wetlands identified for possible water quality improvements. This preliminary sampling, which also included flow measurements, was undertaken to provide some preliminary information on nutrient inputs and outputs from these systems. The sampling results will be used to determine what further monitoring should occur. A wetland bird expert has been engaged to assess wetland bird diversity and abundance at each of the six edge wetlands. There have been few official observations of wetland birds in these edge wetlands for the past 30 years. Bird recording devices have also been installed to assist with bird identification. Members of the Wairarapa OSNZ are keen to be involved in this project. Officers are working with iwi to develop a cultural monitoring program for the FreshStart project.

Technical support for other departments

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

- Environmental Regulation – technical advice was given on a range of resource consent applications, including several water takes and the Hutt City Council’s application to discharge treated wastewater to the Waiwhetu Stream and Wellington Harbour. Input was also provided on a number of consent monitoring plans and annual reports, including annual monitoring reports in relation to several landfills in the Wairarapa and the annual monitoring report for the Wellington City Council’s global consent to discharge stormwater into Wellington Harbour and the south coast. Several science staff also provided input into Greater Wellington’s submission on the NZTA’s consent application for the MacKays to Peka Peka expressway.
- Environmental Policy – assistance continued in relation to work for the next Regional Plan, with the emphasis around limit setting for fresh waters (quantity and quality). A series of regular internal meetings between EMI, Policy and Environmental Regulation staff have been used to develop draft policies and rules for water takes. A key part of this process has been drawing on the recommendations from various science investigations conducted during recent years under the instream flows programme. Science staff delivered a presentation on soil and water quality to a Rural Land Use Stakeholders meeting in late September and a presentation on draft default minimum flow provisions to a Farm Reference Group earlier in the same month. Our terrestrial ecology scientist has contracted a desktop survey of the distribution of threatened bird species in rivers, lakes, wetlands and the coastal marine environment. This information will then be used to identify habitats of threatened species that meet the criteria specified in Policy 22 of the Regional Policy Statement.
- Flood Protection – we continued to provide input and advice in relation to the potential effects on aquatic ecosystems from a variety of routine flood protection and land management activities. While this work is on-going across a range of activities, the particular focus in the last couple of months was participating in discussions around work required to be undertaken prior to Flood Protection’s lodging of applications for 'global' consents for works in rivers in the western half of the region. Our terrestrial ecology scientist is planning bird surveys of selected rivers in the Wellington region to obtain baseline data for seven rivers that are subject to flood protection activities. This data, along with a literature review to identify likely impacts of flood protection activities on the bird species present, will contribute to a code of practice for Flood Protection staff to minimise the impacts of their activities on the river biodiversity values.
- Biodiversity – Output monitoring of rodents, small mammals and possums is completed under contract to the Biodiversity department. Seventeen “Biodiversity Management Areas” were monitored for rodent abundance in August and September. Mustelid monitoring was also completed at two sites. Rat abundance was below 10% tracking rate at all sites where rat control is undertaken with the exception of one site (Parkway). In Wainuiomata Mainland Island (and the associated non-treatment area),

rodent numbers plummeted to low levels as a result of the August 1080 operation. In East Harbour Mainland Island where rat numbers had risen dramatically in response to beech masting, the tracking rate had fallen to 10% inside the mainland island, but was at 48% outside. Possum monitoring completed in late September in the Wainuiomata Water Collection Area showed possum numbers had fallen from 4.6% to 0.4%RTC following the August 1080 operation.

- Water Supply – Monitoring of the forest health of the current water collection areas is completed under contract to the Water Supply department. Hinau fruitfall plots were re-measured in both water collection areas in August. There were significantly less fruit damaged by rodents in the mainland island area (4%) in comparison to the non-treatment area (21%). In the Hutt Water Collection Area, 32% of the hinau fruit were damaged by rodents. The health of the rata trees in Eastern Hutt was also assessed this year. These trees are a good indicator species for possum damage – this year's results show that they are in good condition with improvements in foliage thickness and general canopy health.