# **Catchment Management Division**

Departmental Managers' Update for period ending 30 September 2009

# **Biosecurity (Davor Bejakovich, Manager)**

# 1. Pest Animals: (Ray Clarey)

#### 1.1 Rooks

The rook nest baiting programme commenced on 20 September with seventeen rookeries visited. A further nest baiting exercise will be conducted about 14 October to include rookeries that have a later breeding cycle. Only nests with chicks or eggs are treated. The general media release was very successful and was picked up by the smaller community newspapers from Wellington to Otaki.

Liaison is maintained with Horizons and Hawkes Bay Regional Councils as they conduct their programmes. A meeting of the three councils is planned for November as part of a general debrief and to look at means of increasing proficiency. Traits have developed in rook populations that indicate they are acutely aware of seasonal control. A bid led by Horizons, and partnered by Hawkes Bay and Greater Wellington Regional Councils, is being made to the Envirolink fund to allow Landcare Research NZ Ltd to undertake research to effect the strategic eradication of rooks from the central and lower North Island. Bids for research are considered by the Envirolink Governance Committee of the Foundation for Research Science and Technology. Whilst Greater Wellington is not eligible for any of these funds, it is considered good sense to act as a cohort and support the opportunity for research by experts.

#### 1.2 Rabbits

Population trend monitoring results for the calendar year have been processed. The monitoring disclosed that the rabbit population is at its lowest ebb in the Western Zone since 2002. There has been a slight upswing in the Eastern Zone but not of significance. Hare populations are also measured in the Western Zone and they have shown a marked decline. The population trends are assessed by night counts on defined routes and to a strict protocol. A more detailed report is being included in the Regional Pest Management Operational Plan Report to be published soon.

Pindone carrot bait was prepared and provided to DOC for rabbit control at the Waikanae Estuary. This area has proven to be rabbit prone over many years. There have been some minor rabbit issues on the Petone foreshore and some sites within Wellington City. Areas were assessed for poisoning but it was deemed more efficient to utilise shooting given the nuisance value of a few rabbits combined with the cost and risk management associated with baiting.

# 1.3 Combined Hutt Water Catchment, Akatarawa Saddle and Kaitoke Regional Park Operation

Some of the post operational monitoring for the 11,703 hectare 1080 aerial operation has been completed. The toxic application occurred on 7 August. The aerial operation went smoothly and an excellent result was anticipated. The Residual Trap-Catch result for possums was zero for the Hutt Catchment and Kaitoke West stratum. The much smaller and separate Akatarawa Saddle strata disclosed two possums and a post RTC result of 0.5%. A rodent tracking tunnel monitor has been carried out in the Eastern Hutt Valley and disclosed a drop in rat abundance from 56% in May 2009 to 1% post 1080 operation. The annual native bird count will be conducted in the Eastern Hutt Valley during the first two weeks of October. It is expected that whiteheads, tomtits, fantails, kereru, tui, bellbirds, grey warblers and moreporks will have benefited from the operation.

Heavy rain in the Hutt and Akatarawa River catchments on 30 and 31 August created a significant flood event that resulted in possum and other animal carcasses washing down the rivers. The flood event triggered GW's emergency response plan whereby twelve staff placed 250 signs at areas of risk along the rivers and at the Petone and Eastbourne beaches. The signs warned of the dangers of 1080 poisoned carcasses to dogs. Both carcasses and baits are being monitored for 1080 residues and it is expected that the warning signs will remain in place until early November. One dog was said to have been poisoned by a carcase but no approach was made to GW by the owner and little information was forthcoming in spite of GW's desire to know more.

#### 1.4 Rat control on Taputeranga Island

Taputeranga Island is the small island situated on the Wellington south coast at Island Bay. Staff has provided Wellington City Council with two options to undertake rat control. Control will have to be ongoing as rats can quite easily reinvade this island from the mainland. However, it should be possible to achieve eradication. One control option is based on rodenticide baits and the other on the use of the new gas operated Henry self setting rat/small mustelid traps. Taputeranga Island is home to the Little Blue Penguin and part of the Marine Reserve. WCC will fund the operation and is working in cooperation with iwi. It is possible that volunteers will undertake the ongoing control.

This is just one example of the opportunities for GW to assist in improving the ecological health of the region and gradually shift the prime focus from possums to include other predators where it is practicable to do so.

#### 1.5 Mustelid control

Wellington City Council (WCC) has requested work plans from GW to incorporate mustelid control into the reserves surrounding the city, particularly those that will benefit from the native bird spill over from Zealandia (Karori Wildlife Sanctuary). WCC will fully fund this. The servicing of the extra equipment can easily be undertaken in conjunction with current possum/rat control programmes. The reserve sites specifically mentioned are the Southern Landfill, Careys Gully and Khandallah.

Other mustelid control areas to be undertaken with external funding include Ara Harakeke Wetlands (Otaki) Raumati Escarpment, the Westwind Dotterel project at Otahanga Bay, and the Wananga project at Otaki.

#### 1.6 Good news for biodiversity

Reports of improvement to the ecological health of the region from the public and staff continue to come to our attention. These do not always get heralded to the wider public.

- **From a resident at Parkway**, Wainuiomata "I would like to thank you all for the great work you do. I haven't heard a possum at my place for I don't know how long and the bird life is fantastic. The native birds we see or hear the most are tui, kereru, silvereye, bellbird, morepork, grey warbler and fantail. My entertainment this morning while drinking my coffee was watching the tui that thinks he owns our kowhai tree chasing all others out except the kereru which just carried on munching on the flowers. Great way to start the day!" and then;
- An update on the kowhai tree. The tui who thinks he's the boss has lost the battle and there were 12-15 tuis in the tree this morning, with him sitting at the top jabbering away as they do"
- **From WCC staff** "I have found two green mistletoes, *lleostylus micranthus*, growing on the upper part of the main Mt Kaukau track. They are on *Coprosma foetidissima* shrubs at about waist / chest height. I discovered the first one while picking berries for J B. They are in a typical environment for the species according to the Plant Conservation Species webpage. I do have my suspicions however that someone may have 'seeded' them. They are at a convenient height and are about the same size and stage of development (a main stem of about 30-40cm). There are also single specimens of hutu and *Gaultheria antipoda* on the same area of the track, which I suspect have been planted. Perhaps someone started their own biodiversity restoration project a few years back. I have searched for other mistletoe in the area but so far no more."
- **Further, from GW staff** "I am forwarding this to people who I know will be interested, and who may have an idea of the origin of the mistletoes, if they are not naturally occurring. Is it possible that they have reappeared because of Greater Wellington's intensive possum control work, and by-kill of rodents, in Khandallah Park, over about the last seven years?"

#### 1.7 Kereru under suspicion

Matsudana hybrid tree willows planted on the Poley Stream catchment in the southeast Wairarapa for land stabilisation are being badly damaged. Some trees have been stripped of their new spring growth and branches have been broken. An experienced GW Land Protection Officer said he has never seen anything like it since the bad old days when possums were a significant problem.

The damage is attributed to the flocks of native wood pigeons that have flourished since the large scale possum control operations have been undertaken in the Aorangi Ranges and on adjacent farmland for Bovine Tb control. Whilst the landowner is concerned, GW Staff are certain that the trees will recover and continue to do their

soil stabilisation job. On the positive side, the willows have proved to be an alternative nutritious food source for kereru in early spring.

# 1.8 GW submission on Model Permit conditions for vertebrate Toxic Agents (VTAs) and guidelines for their modification – Discussion Document

GW was invited to submit on the Model Permit Conditions for Vertebrate Toxic Agents (VTA). GW staff and contractors utilise a wide range of VTAs, often requiring Medical Officer of Health approval as an enforcement agency under Section 97 of the HSNO Act 1996. These toxins include, Sodium fluoroacetate (1080), Sodium cyanide, Potassium cyanide, Phosphorous and DRC 1339.

GW strongly supports the review of the Model Permit Conditions.

Key areas addressed included:

- A request that a finite period be set for the processing of applications by the Ministry, with variation given depending on the type of VTA application such as 20 working days for ground control and 40 working days for aerial. There are no current requirements for this time period, with the unknown processing period making the planning and undertaking of operations extremely difficult.
- The document referenced having stronger controls in place but raises the point that this may in fact have the affect of amplifying the perceived risk. An example is the requirement for notification of a water supply at 200 metres from the application zone, with the possibility of extending this distance. GW understands that no trace of 1080 can be found within 100 metres of flow. The requirements in this condition will counteract the concerns listed and the perceived risk.
- GW is concerned over the parity of MOH requirements, both within our region and across the nation. There appears to be little enforcement of the MOH requirements. GW and our contractors meet all MOH requirements for every operation, adding considerable time and administration expense to our control programme. Private operators, many undertaking possum skin recovery operations, do not appear to follow MOH requirements but still continue to operate. GW suggests these requirements are only valuable when they are enforced.
- There are also variances in the consistency of MOH requirements between regions, with permits required for an activity in one region and not in another. For the approval system to be effective and equitable, application requirements should be consistent across New Zealand.
- Other points of note included removal of conditions that are not related to public health, warning sign removal, public notification, track clearance, inhalation of dust, injury during application (i.e. flying pellets) and private water supply testing. GW expressed the hope that any changes to the system will improve the effectiveness and parity of the current system whilst maintaining public safety during VTA applications.

# 2. Pest Plants (Richard Grimmett)

## 2.1 Regional Surveillance Survey

Staff have focused on clearing the backlog of Total Control sites requiring delimiting surveys in this financial year. At the start of the period 40 Total Control sites awaited delimiting surveys. During the delimiting surveys of 29 sites a total of 1166 properties were inspected. As a result of surveys and all other sources (survey, annual site inspections, weed swap meetings, newspaper articles and general enquiry), 18 new infested sites were discovered.

The next target for the Regional Surveillance property surveys is to conduct delimiting surveys around known Surveillance pest plant species sites. This programme is planned for the next financial year.

## 2.2 Total Control Species

Work on this programme commenced early due to warmer September weather. Each species is scheduled based on seasonal growth habit and local micro climate variables. Depending on the species and season, staff will inspect and control all known sites 1-5 times annually. The focus remains on eliminating plants reaching reproductive maturity and reducing infestation density of plants at each site.

Contracts for MAF BNZ national interest pest plants are being negotiated for the upcoming year. These include Manchurian wild rice, Cape tulip, Water hyacinth and Didymo.

Some of the climber species (Madeira vine, Blue passion flower) are proving to be difficult to access safely within some sites. Staff cannot safely remove all viable material on short steep slopes. After consultation with the Labour Department our Staff have sourced a rope fall restraint system that will grant access and allow mobility with the rope backup.

A control of Perennial nettle and Eel grass infestations (in open flowing waterways) is proving difficult. Fragments of these species are readily spread along waterways. Perennial nettle is able to thrive within barriers that limit access, such as steep riverbanks and/or thick blackberry. Staff are assessing alternative control options and the required fund investment levels necessary to realise our target of total control.

## 2.3 Containment Species

This season, staff are focused on reducing infestation levels further within the current control areas. Last season Staff pushed control operations out to the boundary of each infestation. Based on information gathered last year, the program has been revised to schedule activity for control every two-three years on steep inaccessible sites that have low overall infestation density and spread. These sites are normally at the outer radius of the infestation boundaries.

## 2.4 Site Led & Boundary Control species

Staff have responded to all 30 boundary complaints received for the period and issued ten Notices of Direction. The number of non compliance is high for this time of year,

but reflects the warm fine weather the region has experienced and early start to the growing season.

Recent changes to the RPMS have enabled better support to Hutt City Council's ongoing control programme for targeted climbing species. The intent of the support was to enable GW staff to use enforcement powers under the Biosecurity Act on occupiers that refuse entry to Hutt City staff and contractors. Currently Hutt City has 140 owners that have not returned access permission advice letters. GW staff are working with Hutt City staff to resolve the issue of property access.

#### 2.5 Key Native Ecosystems and TA Reserves

Staff have met with our KNE and TA Reserve partners to assess this year's work schedule. Control results from last season look very positive. Our partners are enthusiastic about the outcomes and the restoration potential being realised through the collaborative relationship. Funding for increased levels of activity is being provided as a result of GW's ability to consistently deliver successful outcomes.

To date, 16 contracts have been activated for weed sweeps and release spray operations across the region. Staff worked in 25 KNE sites during this period on a range of activity. The main focus was assessing weeds and setting restoration control priorities.

Staff have continued developing components for our Restoration Manual. The manual is being developed to complement the current KNE review process. The manual will form the basis by which restoration activity is planned, scheduled, undertaken and monitored. It will provide management decision support for new staff as they gain experience. The project is also aligned to other regional and national priorities.

#### 2.6 Biological control

Three staff attended a Biological Control Monitoring course at Landcare Research, Lincoln, focusing on the field performance of biological control agents. The course is aimed at regional biosecurity staff and ensuring national consistency in biocontrol agent performance monitoring.

Staff are revising the GW biocontrol management plan completed last year. The aim is to find a working balance between investing in new agents, managing their establishment and spread, as well as monitoring individual agent performance over time. Currently there is no data on biocontrol agent performance besides presence/absence information.

#### 2.7 Communications

Staff have reviewed relevant information leaflets and promotional material to align them with the reviewed Regional Pest Management Strategy.

A number of newspaper and magazine articles were produced. An update of the Biosecurity activity was published in the Ratepayers News. As a result staff experienced an increased level of public enquiry and reporting of new sites of target pest plant species.

In the last period Staff have been very active updating information on the new GW website and greatly extending the scope and content of the information.

#### 2.8 Community Max

GW is working closely with Work and Income NZ to contribute to the government employment scheme Community Max aimed at up skilling and providing work experience for unemployed young people. The participation in the scheme could provide a significant boost for the biodiversity programmes in the Greater Wellington region. A number of GW divisions and departments are interested in participating in this unique opportunity for improving social and biodiversity outcomes in our region.

# 3. Bovine Tb Vector Management (Graeme Butcher and Grant Crawford)

#### 3.1 2009/10 Vector Control Programme

The AHB approved vector control programme within the Wellington Region for the 2009/10 year is as follows

	Approved projects	Approved hectares
Possum Control	72	208,281
Possum & Ferret surveys	29	87,690
Pig Surveys	15	249,039
Deer Survey	1	88,492
Feral Cattle Control	1	966
Performance Monitor	52	
Trend Monitor	96	

The table below summarises the projects let as at 28 September for the 2009/10 year.

	Possum Control (ha)	Ferret & Possum Surveys (ha)	Pig Survey (ha)	Total
GW BioWorks	49,020	26,164	0	75,184
Professional Guiding Services	74,615	14,132	0	88,747
T Oakly	0	0	249,039	249,039
Totals	123,635	40,296	249,039	412,970

The following table details areas of the 2009/10 control programme which have been completed as at 28 September 2009.

	Possum Control (ha	Ferret & Possum Surveys (ha)	Pig Survey (ha)	Total
GW BioWorks	5,354	0	0	5,354
Professional Guiding Services	10,718	0	0	10,718
T Oakly	0	0	0	0
Totals	16,072	0	0	16,072

Contractors have completed seven possum control projects and have commenced control activities within a further four projects. Contractors estimate that they have completed a further 4,535 hectares of possum control, but these are not yet ready for monitoring.

#### 3.2 2009/10 Monitoring

To date seven performance monitors have been completed. No projects have failed to achieve the contracted performance target.

Three trend monitors have been completed.

#### 3.3 2009/10 pig survey

The following table details pig survey progress to date for the 2009/10 year.

Project	Area (ha)	Progress	Estimated Samples	Samples received to date	Positive Tb samples
Akatarawa	20,538	Commenced	30	12	1
Bideford	39,023	Commenced	40	1	
Castle Hill	4,500	Commenced	30	20	
East Alfredton	4,900	Commenced	20	3	
Featherston	5,325	Commenced	30	0	
Homewood Riversdale	25,789	Commenced	120	36	
Kapiti	22,486	Commenced	50	0	
Mataikona	6,779	Commenced	40	27	2
Moonshine	6,250	Commenced	20	4	
Otaki Crown	3,552	Commenced	15	0	
Pakowai	6,910	Commenced	60	61	
Stronvar	25,976	Commenced	85	34	
Te Wharau	13,995	Commenced	100	12	
Tinui	35,675	Commenced	120	95	
Wellington	29,640	Commenced	50	4	
Totals			810	309	3

#### 3.4 Feral deer survey

The AHB has approved a feral deer survey to be undertaken within the Tararua Forest Park during the 2009/10 year. Tender documents are still to be released.

This work will be undertaken under a Department of Conservation concession which aircraft companies already hold to hunt deer from within the Park.

#### 3.5 Feral cattle control

The AHB has approved a feral cattle control operation in the South East Wairarapa operational areas. Tender documents are still to be released.

This work will include the shooting of feral cattle where occupiers grant consent and inspections to determine the locations of feral cattle.

#### 3.6 2009/10 tender rounds

A number of projects are still to be let for the 2009/10 year. Approximately 41,000 hectares is included in the AHB tender round 2 which was released on 28 August and will close on 12 October. Contracts are expected to be let in early November.

BioWorks and Professional Guiding Services both have two year preferred supply contracts with AHB. They have been awarded a portion of these parcels following the submission of acceptable work plans. Both contractors are currently preparing work plans for AHB assessment prior to the allocation of the remaining preferred supply parcel.

#### 3.7 2008/09 programme

The following table details projects which were not completed by 30 June 2009 and their progress for completion in the 2009/10 year.

Control Projects	Area (ha)	Project	Comment
Akatarawa HR 1	1,497	Control	40% Complete
Akatarawa HR 1		Monitor	Not yet scheduled
Akatarawa HR 6	1,453	Control	Completed
Akatarawa HR 6		Monitor	Completed
Akatarawa HR 7	1,035	Control	Completed
Akatarawa HR 7		Monitor	Completed
Haurangi Crown HR 1	289	Control	Completed
Haurangi Crown HR 1		Monitor	Completed
Haurangi Crown HMR 1	5,664	Control	Completed
Haurangi Crown HMR 1		Monitor	Completed
Kahutara Pirinoa HMR 4	762	Control	Completed
Kahutara Pirinoa HMR 4		Monitor	Completed
Kahutara Pirinoa HR 3		Monitor	Completed
Kahutara Pirinoa HR 4		Monitor	Completed
Moonshine HR 1	903	Control	Re-work complete.
			Monitor underway.
Te Wharau HMR 7	943	Control	Completed
Te Wharau HMR 7		Monitor	Completed
Te Wharau HR 4	1,610	Control	Completed
Te Wharau HR 4		Monitor	Completed
Waiorongomai HR 2		Monitor	Completed
Totals	14,156		

#### 3.8 Infected herds 2008/09

		l Herds @ June 2008	I Herds @ end of August 2009 (one clear test in brackets)	Target I Herds @ June 2010
	Cattle	0	0	
VFA	Deer	0	0	
	Cattle	5	4 (3)	8
VRA	Deer	0	0	

# Flood Protection (Graeme Campbell)

# 1. Manager's comments

Staff continued to be busy throughout last month with the SAP Asset Management project and the Mills Street investigations affecting the department's normal work programmes. However, these two projects are now substantially complete and staff can now refocus on planned works programmes.

Staff have started work with Hutt City Council dealing with how flood hazard information for the Hutt and Wainuiomata rivers should be conveyed to the community. This work, combined with the completion of the Waiohine FMP hazard work, has the potential to affect a large number of properties and staff are taking care to develop a suitable strategy for the release of this information.

Work is progressing well on the normal Flood Protection maintenance activities although there have been some delays in completing all of the annual asset inspections as staff have been focused on getting the new SAP Asset Management software operational.

# 2. Western Floodplain Management Plans [Daya Atapattu]

## 2.1 Ava to Ewen project

The contractor has hydro seeded the Strand Park berm areas and currently tidying up drainage and the walking track as part of contract maintenance works. Planting at the end of St Albans Grove will commence in October 2009. Two flood lights were mounted on the existing light poles on the eastern end of the Ava Rail Bridge to illuminate the foot path under the bridge. A lighting contractor was asked to provide a proposal for illuminating the foot path from Wakefield Street to the Ava Bridge.

## 2.2 Boulcott/Hutt stopbank project

The working party of the two golf clubs have now substantially completed the proposals for merging golfing interests between the two clubs. Staff understand that the two clubs will have special general meetings in October/November 2009 to consider these proposals and then meetings in early November 2009 to make a decision on the merger proposal.

The design consultants are investigating a number of options for the Connolly Street road crossing to reduce the impact on Connolly Street residents. The detailed design at this location is complicated by the presence of 11 KV cables, sewer and stormwater pipes, a high retaining wall and the slipway.

#### 2.3 Whirinaki Crescent stopbank

A meeting was held on 17 September 2009 with the affected residents to obtain their feed back on a landscape plan prepared for the un-used section of the existing stopbank. This will now be submitted to UHCC. Tree removal and stopbank

construction will be completed before Christmas 2009.

#### 2.4 Mills Street stopbank

On 29 September 2009, Council considered and adopted the yellow alignment as the preferred alignment for the Mills Street stopbank. Staff will communicate this decision to the affected property owners and other stakeholders.

#### 2.5 Maoribank and Ebdentown works

Surveys and design for urgent works at Maoribank have now commenced. These works, expected to commence in February 2010, involves placing about 1000 tonnes of rock in the scour hole to reduce the erosion risk. Ebdentown rock lining works will be completed over a two year period and the design and consents are scheduled for completion in 2009/10.

#### 2.6 District plan changes

UHCC staff are planning to commence consultation on the proposed plan change 15 to update the Hutt River flood hazard information in the district plan in October 2009. GW staff will assist them consult with the affected residents.

#### 2.7 Kapiti floodplain management

#### 2.7.1 Waikanae Floodplain Management Plan

Flood protection managers and staff held their annual walkover of the Waikanae River on 16 September. This opportunity allowed staff to inspect the flood protection assets along the river, assess future operational and improvement works, and consider planning/environmental issues. Overall the assets on the Waikanae River are considered to be in good condition.

Ontrack have advised their intention to close the rail crossing that presently provides us with access from SH1 to the south side of the river. The closure is for safety reasons associated with double tracking. This will seriously affect our ability to carry out emergency works, maintenance and improvement works. Staff are considering a range of options to remedy this situation.

#### 2.7.2 Otaki Floodplain Management Plan

All works associated with the Chrystalls Extended Stopbank have been completed except for the land purchase of the Winstones/Stresscrete site and river corridor from LINZ.

Design work has commenced on extending the Stresscrete rock line located on the right (north) bank above the SH1 and rail bridges.

Keep Otaki Beautiful held a public meeting on 25 August to promote planting the banks of the Mangapouri Streams with native trees. The turnout of over 40 people indicated a keen local interest in this proposal. Assistance with the planting will be given by Jacki Bird (GW Land Management) under the GW "Streams Alive" programme. Close coordination of planting proposals with the Flood Protection

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department will be required to ensure the routine channel maintenance and future upgrading of the stream are not compromised.

#### 2.7.3 Friends of the Waikanae River (FWR)

Preparation of the area around the oxbow on the Waikanae River has continued by the Friend of the Waikanae River in conjunction with Kapiti Coast District Council and GW with landscaping, channel cleaning and a new culvert reinstating water flow into and around the oxbow (funded by the DoC Community Conservation Fund). The oxbow is one of the last unmodified areas in the Waikanae River and as such is a significant ecological area. The Friends have also continued with other restoration plantings on the river since August.

The FWR and Consents annual walkover of the Waikanae River is planned for 14 October 2009.

#### 2.7.4 Friends of the Otaki River (FOTOR)

The BOC Gases funded site on the Otaki River has been partially planted, and the Friends have organised Department of Corrections community workers to spread mulch on the site. The friends have been busy preparing plants for the estuary restoration work (as funded by the DoC Community Conservation Fund). Over 3000 plants have been purchased and are being 'grown-on' in the nursery for planting in the estuary next year.

The annual walkover of the river is planned for 4th November, with the AGM on the 11th November. The Minister for Conservation, Nick Smith, the local MP, Nathan Guy, and the Mayor, Jenny Rowan, have been invited to the walkover starting at the Otaki Depot at 9.00am and finishing about 1.00pm.

## 3. Western Operations – Jeff Evans

#### 3.1 Hutt River

Willow planting is now complete with 2,848 units planted along the Hutt River berms. Native planting is still in progress and willow rejuvenation work has been carried out south of Silverstream Bridge. Access track and drainage repair work has also been carried out between Silverstream and Moonshine after flood damage late last month and new bollards have been installed along the Whakatiki berms.

Flood gate maintenance is underway in Upper Hutt.

#### 3.2 Hutt River ranging services

The last few months of weather have been quite settled and the river trail had steady usage throughout with the usual walkers, runners, cyclists and dog owners.

There were a number of events over the last period. The Pelorus Trust held a running event along the river trail with 800 participants. Capital Multisports held their second

five bridges marathon and there were several orienteering events at Belmont and Avalon.

A community planting day was held at the Petone sand plant at the river mouth. Staff from Flood Protection and Winstones teamed up with members of the community to plant several hundred salt tolerant shrubs along the southern edge of the site.

#### 3.3 Otaki River

Staff have now finished the willow planting and rejuvenation work, Native plant mulching has been undertaken in conjunction with the friends groups and a large number of trees have been removed from the stopbank face on the right bend just below the SH1 bridge.

The Otaki River Mouth was cut on 27 September as the mouth had blocked, causing water levels to rise to concerning levels in the Rangiuru area.

#### 3.4 Waikanae River

Willow planting and layering is still underway on the Waikanae River, and a number of overgrown weed infested areas have been cleared in preparation for re-planting.

#### 3.5 Watercourses

Willow planting is underway on the Wainuiomata River. Old and dying willow stands have been cut back and hybrid stock has been re-planted. A number of fallen trees have been removed from the Waiwhetu Stream and a large blockage of trees were removed from the Waitohu Stream, just up from the river mouth. Staff attended a recent Tawa Community Board meeting and have been invited back to the next meeting to further discuss the walkway opportunities they are developing along the Porirua Stream.

# 4. Wairarapa Operations [Mike Longworth]

#### 4.1 Wairarapa River Schemes

#### General

Work programmes in the Wairarapa rivers for 2009/10 are progressing. Planting programmes are largely completed and machine work, to maintain alignments together with tree work to protect erosion spots, is underway.

The flood on 23 and 24 July produced a 5 year return period flow in the Ruamahanga River and has been followed by a number of small fresh's and an annual flood event on 1 September. These small floods have been causing further bank erosion which is being monitored.

Staff have spent considerable time adapting to and implementing the new SAP asset management system.

## Gravel

The gravel returns for last year were 220,643 cum which are 70,272 cum less than the previous year at 290,915 cum. The highest return was 298,913 cum in the 2006/07 year. The number of gravel licences issued so far this year is similar to previous years but the returns have been budgeted to be less than last year.

# Development Work Programme for the Lower Wairarapa Valley Development Scheme

The majority of this year's work will not get under way until the second half of the year when it is dry enough for earth works construction. The planting programme is now complete and land purchase for the gravel deposition area at the Tauanui delta has been approved.

## 4.2 Investigations and Technical Advice

#### Waingawa River Scheme Review

Work on the review has progressed with most of the background technical analysis being completed. The hydraulic model was refined once accurate ground levels became available following the Lidar survey. Results of the work have been reported to the Waingawa River scheme committee. Future work will involve determining the environmental impact of the scheme work on the river. Once this work is completed a number of river management options will be assessed as to their suitability and affordability for discussion with the community.

#### **River Management Consents**

The existing global consents for carrying out river management work have proven to be restrictive in the quantities of work allowed, compared to the scope of work that is planned in the upper valley rivers. This position has gradually occurred as the various river scheme budgets have increased following scheme reviews to meet the adjacent landowner's expectations. It is planned to apply for short 2 year term resource consents to enable the scheme work programmes to be carried out in the interim, while longer term applications are developed. Geoff Dick has been engaged to help with this process. Initial discussions have been held with some of the stake holders.

#### Waiohine Floodplain Management Plan

Work has progressed on the Floodplain Management Plan (FMP) for the Waiohine River floodplain. The hydraulic modelling is being finalised with flood hazard maps expected to be ready for presentation at the inaugural meeting of the FMP ommittee. These flood hazard maps will allow the remaining items in phase one of the FMP process to be completed. The new Waiohine Floodplain Management Plan Advisory Committee will meet and consider the flood hazard maps in early November 2009.

#### 4.3 Drainage Schemes

The wet winter caused higher than normal power usage and a series of unplanned electrical and mechanical maintenance problems at three of the pump stations. Rate increases will be necessary for those schemes that are over expended and that do not

have adequate reserves. Meetings to propose rate increases on the five pumped schemes will be held over the next month. The drainage schemes are entirely funded by the benefiting farms.

# 5. Investigations and Assets [John Eyles]

#### 5.1 Waiwhetu cleanup project

Earthworks and infrastructure works are underway, with the construction of permanent flood protection features and the removal of contaminated sediment on track to begin in October.

Downstream of Seaview Road Bridge, the true right (northern) bank has been levelled and widened to create an eight-metre wide access way to allow access for heavy machinery. A guide wall has been added along the water's edge, which will allow the permanent piles to be accurately positioned as they are drilled. These piles will form part of the foundation for the first retaining wall.

A sewer crossing upgrade has begun adjacent to the Owhiti urupa (cemetery), with the installation of new manholes.

Upstream of Seaview Road Bridge, a pump station is being installed at Hutt Park as part of sewer works for Hutt City Council.

The upgrading of the stormwater pipe systems and services relocation work at the Top 10 Holiday Park is almost complete. Work on stormwater outlets will continue along both banks.

Trees have been cleared along both banks. A series of sheet pile walls are being installed on either side of the old railway bridge to form the first coffer dam cells. The clean up works are on schedule to begin in October.

## 5.2 Pinehaven flood hazard assessment

A joint project with Upper Hutt City Council is underway to complete the first stage of a flood hazard assessment for the Pinehaven stream.

About 150 local residents attended a "drop in" session on 12 September at Pinehaven Hall to view and give comments on the draft flood hazard maps. Staff received many useful comments which have helped our understanding of flooding within the catchment.

The main outputs from the study will be a set of flood hazard maps which will identify those areas at risk of flooding. The maps are now due in October as additional work to calibrate the model has been authorised following two storms in July and September. This work will improve the quality of the hydraulic model.

#### 5.3 Asset management

SAP went live for Mabey Road on 10 August, followed closely by Wairarapa and Kapiti operations on 17 August. This represents a considerable step forward for the department in terms of asset management and the ability to report on operational activities.

As at 22 September, 71 notifications have been lodged within SAP for work, 573 works orders have been created to a total value of \$139,784.26. A departmental review of SAP will be undertaken before Christmas.

Annual asset inspections have been delayed from last financial year due to the heavy commitment of operations staff to the implementation of SAP asset management software. The annual asset management report will be provided to the next Committee meeting.

# 6. Strategy and Technical Support [Sharyn Westlake]

The following table summarises the number of formal, written requests for advice responded to over the period from 19 August - 18 September 2009. These include information requests from the public, local authorities and also Flood Protection comment on resource consent applications to GWRC.

	19 August - 18 September 2009	YTD
Requests brought forward	6	1
Additional requests received	32	77
Responses provided	36	77
Outstanding requests	2	1

Over this period, the Flood Protection Department provided input to the Regional Council submissions on Wellington City Council's Plan Change 70 - Earthworks, and Hutt City Council's proposed Eastern Hills development.

Staff have been discussing the process for a Plan change, which will incorporate the flood hazard identified in the FMP into the Upper Hutt District Plan, with Upper Hutt City Council staff. Hutt City Council is setting up a Hazards Database to collect hazard information that they will then include on LIMS. This will include the flood hazard information previously prepared by GW for the Hutt River, Waiwhetu Stream and Wainuiomata River. GW staff are working with HCC staff to prepare information including a letter, fact sheet, and flood hazard information to go out to affected members of the community to specifically inform them of the flooding information (affecting their property) that will be going on LIMs. This information is going to a large number of people in the Hutt Valley some of whom may be unaware they live in a floodable area. This may cause some interest and concerns so we are currently developing a strategy for the notification to the landowners of the information.

# Land Management (Dave Cameron)

## 1. Manager's comments

#### 1.1 Land Management appointments

The two Land Management vacancies have recently been filled. The role of Project Coordinator for the Wellington Regional Erosion Control Initiative (WRECI) has been filled by Andrew Stewart of Gladstone. Andrew has previously worked for Otago Regional Council and the NZ Landcare Trust. For the past seven years he has farmed at Gladstone as well as taking a significant role within Sustainable Wairarapa.

Scott Andrew has been appointed to the role of Land Management Officer, recently vacated by Andrew Patrick. Scott has 10 years work experience in the forestry industry working in Marlborough and central North Island. He comes from a family background of farming in the Wairarapa.

Both these appointments have strong links to the region. This will stand them in good stead as they embark on their new careers.

#### **1.2** Winter planting programme

The weather gods have been kind in the latter part of the winter/early spring providing enough calm days to complete release spraying as well as issuing 50 mm of rain in late September. The rain in particular has been most welcome as the early part of September was one of the drier September periods on record.

Tree survivals have generally been very good, although a couple of the Afforestation Grant Scheme blocks have lost some trees on the drier faces. Final establishment rates will be signed off on all AGS blocks in October and grants forwarded to landowners in December.

#### **1.3 Afforestation Grant Scheme and draft WRECI contract**

The draft WRECI contract from MAF is looking to restrict the size of conservation woodlot in a WRECI Plan to 5 hectares. They are suggesting that all other woodlots come under the Afforestation Grant Scheme. This will limit the farmer's discretion especially their ability to take advantage of the potential carbon market, and could impact on the WRECI programme achieving its long term planting goals.

GW has suggested that the limit be raised to 10 hectares before it is compulsory to take the AGS option. A meeting has been arranged with MAF officials on 1 October to discuss the implications of this condition.

To date only 5% of the blocks applying for AGS funding are less than 10 hectares so the impact on the overall national status of AGS is very minor. The average size of an AGS block across the 64 applications approved to date is 33 hectares. It is evident that AGS is attracting larger blocks of land and it seems strange that such a condition should be imposed.

## 1.4 Issues for the next period

- WRECI strategy approved
- Installation of the new irrigation system at Akura
- Securing a nursery lease at Homebush
- Finalising LUC maps for Farm Plan reviews

## 2. Farm Plans and Communities (Don Bell)

#### 2.1 Delegated approvals - New Plans, Reviews and Annual programmes

The preparation of New Plans and reviews will begin in the second quarter of the year. A new addition to the table is WRECI Plans. 10 WRECI plans are scheduled for 2009/10 and the remaining 90 will be spread over the following six years.

Approvals – Year ending 30 June 2010	New 10-year Plans, Reviews	Annual Plan Targets	Total Programme Estimates	
New Sustainability Plans	0	3	\$	
New Conservation Plans	0	2	\$	
WRECI Plans	0	10	\$	
Ten Year Reviews	0	20	\$	
Programme delivery – 2009/10	Annual Programmes Undertaken	Annual Plan Target	Expenditure to date	Annual Plan Budget
<ul> <li>Annual Programmes</li> <li>Sustainability plans</li> <li>Conservation plans</li> <li>Shelter plans</li> </ul>	120	130	\$349,200	\$565,000
Isolated works	3	5	\$2,300	\$10,000

## 2.2 Winter works programme

A change from frequent light showers throughout July and August to a relatively dry September brought home the importance of early planting. Very high seedling planting survivals were achieved as a result. By contrast, some late plantings on exposed sites are under stress.

A full winter de-brief has been concluded. The "tight financial times" have resulted in pole numbers being slightly down on last year. This coupled with excellent contractor performance meant planting finished earlier than expected. Four helicopter pole

spreading flights and one seedling flight were completed at costs comparable to last year's low rate.

Similarly, the very good performance of GW staff and contractors resulted in the efficient and professional delivery of an expanded seedling planting programme primarily due to the AGS.

The last stage of the programme (release spraying) is now underway.

#### 2.3 **Promotion and education**

Land Management staff have been regularly involved in promoting environmental restoration with Care groups, schools, colleges and agricultural trainees in the last two months. They also contributed significantly to the Conservation Week activity programme promoted by the Department of Conservation. The various activities included:

- Two community native tree and shrub planting days on the Makoura Stream gas works site, in partnership with MDC
- Two days of planting natives with Makoura College students on the stream below the college
- Demonstrating pole planting to Taratahi Training Farm trainees on Glenstrae and their subsequent planting of 200 poles on Mangarata
- The planting of 800 native seedlings by the Whangaehu Stream Care group (just north of Martinborough)
- South End School (Carterton) joining with the Enaki Stream Care Group to fill gaps in the Shields Wetland plantings (2008 Honda tree fund)
- Dalefield School kids planting 300 natives on a small tributary stream in the Enaki Catchment
- Eighty Greytown Primary senior pupils assisting Papawai marae, Papawai Community Trust, Rotary club and locals plant 300 native trees and shrubs funded through GW's Ara Tahi grant scheme.
- Kahutara and Pirinoa Schools assisting with the sand dune reclamation plantings at Whangaimoana
- Three events at Riversdale involving Tinui School and locals in dune reclamation and biodiversity plantings

#### 2.4 Lower Ruamahanga Scheme

The first year's planting to enhance biodiversity in the Lower Ruamahanga River has been completed. Land Management has been engaged by Flood Protection to undertake a series of annual plantings from the Barrage gates to Lake Onoke to assist with erosion protection and create biodiversity pockets along the stop banks bordering the river. Six separate sites were planted with a total of 3,750 plants comprising a mix of Native flax, Coastal flax, Toetoe and Giant umbrella sedge.

## 3. Akura Conservation Centre (Stan Braaksma)

#### 3.1 Nurseries

This year most of the post winter nursery operations were completed in September. All nursery beds have been row sprayed, all mulching and mowing is complete and the majority of cuttings planted and sprayed with a residual herbicide at Mangapakeha Nursery. These new plantings will exhibit bud burst at the time of normal bud burst of poplars and enable an earlier than usual start to the growth season.

Most pole material has been uplifted and charged. There are still small numbers of poles and stakes bundled for Flood Protection programmes.

Fertiliser has been ordered and will be applied in October. Every year 40 units of N, 32 Ca, 25 K and 20 S are applied per hectare as a maintenance dressing. Some adjustment is made if the soil tests reveal readings outside the optimal ranges.

The final 3m pole cut was 17,500 from our own production and 5,000 imported from RST Aokautere and Coppermine Nurseries. Next year's 3m pole production predicts pole surpluses and can accommodate demand up to 26,000 poles. Next year's budget has included only 23,000 3m poles as an initial season target.

Weather conditions have been very dry through the latter part of winter and soil moisture had begun to reduce as a result of the warm dry early spring conditions. The late September rains (50mm) have improved the outlook for good spring poplar and willow growth without the need to start up the irrigator.

#### 3.2 Akura resource consent

The resource consent for a water take from the new 250mm bore at Akura has been approved and will run until September 2017. A new flow meter is required to record all daily abstractions for monitoring and reporting. The consent allows a maximum of 16 litres/second for 14 hours/day and up to 150 days/year. In periods of low flow in the Waipoua River where the flow is less than 250 litres/sec at the Mikimiki monitoring site, the consent requires a halving of the abstraction rate to 8 litres/second. Tenix are due to establish three phase power at Akura, and Ordish & Stevens have ordered the Bauer Rainstar T31 irrigator and already landed the hydrant piping. Indications are that the new system will be operational by late December.

#### 3.3 Trading

The annual Akura sale day is 2 October and signals the end to trading. While there has been a reduced turnover in many species this year staff don't expect to be stranded with large numbers of unsold plants. The two exceptions are P.radiata seedlings and Leyland cypress. As an overview to this season, there have been some large projects such as Castlepoint Station riparian programme, Makoura Stream and the Government's AGS scheme supporting large volumes of trees. The counter has been less demand from lifestyle blocks, large scale shelter belt planting, such as new vineyards and an unexpected reduction in support from the dairy industry. Pole sales are showing an increase on last year and considering two drought seasons, demand has remained strong for poplar and willow poles. Wairarapa Stars Trust is to cease supplying native plants. Small numbers for supply to Akura had been negotiated in recent years. Outside of this they had produced spinifex and pingao for dune restoration projects. More importantly they have completed two successful years of eco-sourced seed collection for Akura. An ex-staff member will continue with this contract for next season.

An opportunity has arisen to contract Norfolk Road natives to grow root trainer stock for Akura next year. This nursery will supply 25% of the current demand. Our principal nursery will still be Morgans Road Nursery in Blenheim.

Cambridge Nursery has consolidated their position as a major exotic seedling supplier for Akura. This year they supplied 250,000 GF 19 P.radiata and 10,000 Douglas fir seedlings. Tree supplies come with free delivery to Akura and will include rooted poplar and willow stock for next year.

#### 3.4 Budget

The Akura Business Unit has an operating surplus at the end of September totalling \$134,300 against a budgeted annual surplus of \$28,600.

The Nursery unit is exhibiting a reasonable surplus for this time of the year. Over the summer contracted pruning services will gradually reduce this surplus. The September result for trading is well above the projected annual surplus. Traditionally, 80% of the trading income arrives in the first quarter. Some costs are still to come to hand in the trading account.

Activity	Operating Surplus – Annual Budget 2009/10	Operating Surplus - Actual September 2009
Nurseries	(11,500)	43,500
Trading	40,100	90,800
Total	28,600	134,300

#### 4. Biodiversity (Jacki Byrd)

#### 4.1 Ongoing works

Release spraying has begun on the Kapiti Coast, and will move to the Hutt Valley and then Wairarapa. Over 15,000 plants need to be maintained this summer at 63 sites.

#### 4.2 Mangapouri Stream

A public meeting was held on 25 August organised by Keep Otaki Beautiful. The aim of the meeting was to encourage community action and motivate landowners along the Mangapouri Stream in Otaki to improve the health of the stream. Around 40 landowners attended the meeting, and 15 new sites along the Mangapouri will be planted next winter. Photos of the Mangapouri Stream taken by Lloyd Chapman of

Keep Otaki Beautiful shown at the meeting showed many sections of the stream in a sorry state. Once upon a time local children would swim in the stream and eels were plentiful.

Three key issues raised at the meeting that have negative impacts on the stream are eroding banks, garden waste and weeds.

Streams Alive will be contributing press releases with Keep Otaki Beautiful to inform the community of how to resolve these issues, such as planting stream banks to reduce erosion and the amount of mud in the stream, taking weeds to the transfer station and how to control environmental weeds on the banks.

#### 4.3 Karori Stream

A new stream care group is being formed along the Karori Stream by local residents. The Karori West Normal School has also contacted Streams Alive for support planting the stream banks next to the school. It is hoped these two community initiatives will increase the number of properties involved in Streams Alive along the Karori Stream as there has been little activity to date in this catchment.

## 4.4 GrowSafe

Twenty four Streams Alive landowners now have their GrowSafe certificates and 18 attended the practical weed control follow-up days in Upper Hutt and Otaki. Landowners gave very good feedback, saying they now feel more confident with common herbicides, spray equipment, and know how to find information from websites on how to control the environmental weeds on their properties and stream sides.

#### 4.5 Streams Alive newsletter

The second Streams Alive newsletter was posted to all landowners involved in the programme, both past and present, in September. The newsletter aims to keep landowners up to date with stream and seasonal issues, such as plant and animal pest control, plants to encourage native birds and stream research. It also aims to create a sense of community amongst landowners who live in the Streams Alive catchments.

#### 4.6 Restoration planning and monitoring workshop

A restoration planning and monitoring workshop is being held for landowners and community groups on 10th and 11th October. The aims of the workshop are to provide community restoration / care groups and covenant owners the skills and knowledge to develop ecological restoration plans, undertake robust monitoring programmes and to report on progress.

Around 30 people are expected to attend and Greater Wellington has four staff supporting the workshop, organised by the Department of Conservation, and funded through the Biodiversity Advice Fund.

#### 4.7 Expenditure to date

	Budget 2009/10	Expenditure to date	% of Budget
Riparian Management	\$196,200	\$100,000	50.9%
Streams Alive	\$100,000	\$72,393	72.4%

## 5. Operations (Kevin Burdan)

#### 5.1 OSH

An investigation has been carried out on an incident at Tuturumuri involving a contractor who fell over a bluff while release spraying. The services of the Westpac helicopter were required to lift the injured man from the site. The Department of Labour have signed off this incident as an accident and were complimentary on the Health and Safety performances of the contractor and Land Management.

Audits have been completed on two silviculture crews and the Land Management vehicles.

Evidence is currently being compiled for the forthcoming ACC audit.

#### 5.2 Poles

Pole audits have been carried out on 22 properties with varying results. The best had a survival rate of 99.7% over 300 poles and the worst survival rate surveyed was 62% over 100 poles. The mean survival over the total poles surveyed was 91.6%. The main casualty was Veronese poplar, a pole normally planted in the drier, windier sites

#### 5.3 Silvilculture

Silviculture work has been very limited in the last few weeks with the weather being a major hindrance. 15.5ha of silviculture has been completed in the Metro forests, and 16.6ha of thinning and 2.6ha of pruning in the Wairarapa Reserve forests.

Activity	Completed	\$	Annual Plan Target (hectares)	Year to date	\$
Thinning	1.1ha	688	100	64.0ha	24,660
Pruning	16.9ha	12,135	100	67.8ha	54,241
Total	18.0ha	12,823	200	131.8ha	78,901

#### Farm Plan Silviculture

Activity	Completed this period	Expenditure this period	Year to date	Expenditure to date
Pole planting	1,750	\$7,815	9,645	\$45,803
Seedling planting	13,800	\$6,680	1,293	\$62,234
Release/pre spraying	3,200	\$696	11,937	\$28,809
Total		\$15,191		\$136,846

## 5.4 Contract pole and seedling planting

Additional to the above figures, seedling planting and release spraying on 149.6 hectares has been completed as part of the Afforestation Grant Scheme programme.

# Forestry (Barry Leonard)

## 1. Plantation forests (Wellington)

#### 1.1 Log Harvest Contract

While prices in China improved again for August, most of the benefit was absorbed by an increasing exchange rate and a US\$5 increase in shipping costs. The result was increases in the range of \$1 to \$2 per tonne.

The improved quality of the trees harvested made it possible to take advantage of the minimal increase in price with a stumpage of \$103,630.

Log 36, the hauler crew, has been based on one skid in Boiler Gully, which maintained production throughout the month without the downtime associated with a move. This crew also worked three Saturdays to increase production.

In contrast, while the ground based crew spent the month in Maori Redoubt, they operated off three different skids and incurred the consequential downtime. This crew is recovering recent wind-throw and endeavouring to leave a boundary with the standing trees that will be wind-firm until the planned harvest of the balance of the block takes place in 2013.

Log 36 harvested 3,141 tonnes for \$68,221, at an average of \$21.72. Log 6 harvested 2,424 tonnes for \$35,408, at an average of \$14.61.

To continue to demonstrate the effect of the log standard we can add August with its improving quality to the chart.

Month/year	Saw log %	Rough %	Pulp/firewood %
May 2008	69.54	20.73	9.73
June 2008	66.94	27.30	5.77
July 2008	63.65	29.76	6.59
Average	66.71	25.93	7.36
July 2009	51.5	24.7	23.8
August 2009	58.04	23.74	18.22

Domestic log demand into Featherston remains below historical levels but Masterton will still take all of M22 grade which is available. This is their traditional purchase. During the month I visited the Kiwi sawmill in Waingawa and, although their purchases from us are high, the plant is not working at full capacity.

The "small" hauler (45 foot tower) has just moved onto a setting in Boiler Gully where the maximum haul capability is in use.



The view from the bulldozer anchoring the haul lines looking back towards the hauler and the skid



The breaker outs coupling log onto the haul lines, with the bulldozer as an anchor in the background

#### **1.2 Silviculture Contract**

In August 31.52 hectares of silviculture was completed. This included the completion of the Rifle Range high prune and thin, and a number of smaller blocks in the Hukinga.

There was no planting during this period but the planters have returned this month (September) to plant as much of the cut over as they can before the warm weather requires an end to planting for the season.

#### **1.3** Plantation Forestry operations

With both crews in Valley View, the average haul from the gate is reduced but the first 7.5 km are used by the trucks servicing both skids. This has intensified the wear on the road. These effects are reducing as the daylight hours and average temperature increase. There has been a need for metal to maintain the tractive surface on the road and the removal of several minor slips to ensure ongoing water control.

There has been no progress on the Raupo Swamp Road upgrade this month.

Staff members have continued to supervise the Silvicultural Contractors and monitor the quality control plots.

#### 1.4 Forest Access

The lack of access into Maungakotukutuku remains. It appears that the proposal by the neighbouring forest to log part of their block through GWRC's Maungakotukutuku Forest will go ahead. This will enable us to reinstate the gate into the forest to prevent 4WD access.

All main roads are in good order.

#### 1.5 Market Trends

Domestic markets are a mixed bag, with some continuing at depressed levels and others clearly increasing production. It is understood that a number of logging crews have been stood down in the Wairarapa, which may account for the increased interest from that area.

There is no further progress with Eurocell.

Export demand remains strong, although there are reports of some importing companies in China having difficulties. Both the New Zealand dollar and shipping rates are of concern and effectively nullify the greater part of any increases gain at destination.

#### 1.6 2010 – 2014 Forest Harvest Contract

Planning continues for this Contract, which it is hoped to release mid-October and takes effect from 1 March 2010.

# 2. Reserve forests (Wairarapa)

## 2.1 Tauanui logging

The "new" crew is settling in well and appears to be maintaining volumes in some pretty difficult terrain. In August they harvested 1,373 tonnes for \$25,510 at an average of \$18.16 per tonne. During this period only A and K grade logs were loaded out to export, as the lower grades returned negative stumpage.

## 2.2 Silviculture

No silviculture was undertaken in this period, although some work is programmed for later in the year.

## 2.3 Tauanui replanting

A total of 6,600 seedlings were planted over an area of 15 hectares to supplement the natural regeneration.

#### 2.4 Maintenance

The road was graded, potholes repaired and minor slips removed to enable the crew to move higher up the northern side of the block.

## 2.5 Rainfall

August proved to be a dry month, with only 70 mm of rain recorded at Stoney Creek and 40 mm at Tauanui. Although there has been one night of rain this month, the ground and vegetation is very dry and it looks like a busy summer if the dry continues.