

AGENDA

ENVIRONMENTAL MANAGEMENT COMMITTEE

Tuesday 27 October 2015 9.30am

**NORTHLAND REGIONAL COUNCIL
ENVIRONMENTAL MANAGEMENT COMMITTEE**

Agenda

Meeting to be held in the Council Chambers, 36 Water Street, Whangarei
on Tuesday 27 October 2015 commencing at 9:30am

MEMBERSHIP OF THE ENVIRONMENTAL MANAGEMENT COMMITTEE

Cr J Carr, Chairman

Cr C Brown (Deputy Chairman)	Cr B Shepherd (ex officio)	Cr P Dimery
Mr R Booth (KDC)	Cr A Court (FNDC)	Mr A Clarkson
Ms Sue Reed-Thomas (DOC)	Cr T Cutforth (WDC)	Mr G Gover
Mr K Volkerling	Mr M Hunt	Cr M Knight

OPEN MEETING

Item:

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ISSUE: Confirmation of Minutes – 31 August 2015

ID: A782026

To: Environmental Management Committee, 27 October 2015

From: Nola Sooner, Committee Secretary

Date: 24 September 2015

Report Type:	<input checked="" type="checkbox"/> Normal operations	<input type="checkbox"/> Information	<input type="checkbox"/> Decision
Purpose:	<input type="checkbox"/> Infrastructure	<input type="checkbox"/> Public service	<input type="checkbox"/> Regulatory function
	<input checked="" type="checkbox"/> Legislative function	<input type="checkbox"/> Annual\Long Term Plan	<input type="checkbox"/> Other
Significance:	<input type="checkbox"/> Triggered	<input checked="" type="checkbox"/> Not Triggered	

Executive summary:

The purpose of this report is to present the minutes of the Environmental Management Committee meeting held on 29 June 2015 (**attached**) for confirmation as a true and correct record.

Legal compliance:

Councils are required to keep minutes of proceedings in accordance with the Local Government Act 2002.

Recommendations:

That the minutes of the Environmental Management Committee meeting held on 31 August 2015 be confirmed as a true and correct record.

**NORTHLAND REGIONAL COUNCIL
ENVIRONMENTAL MANAGEMENT COMMITTEE**

Minutes of the Environmental Management Committee Meeting
held in the Council Chamber,
Northland Regional Council, 36 Water Street, Whāngārei, on
Monday 31 August 2015, commencing at 9.30 am

Present:

Northland Regional Council

Cr Joe Carr (Chairman)
Cr Craig Brown (Deputy Chairman)
Cr Bill Shepherd (ex officio)

Farming Community

Alan Clarkson

Far North District Council

Cr Ann Court

Kaipara District Council

Richard Booth

Department of Conservation

Ms Sue Reed-Thomas

Māori Interests

Keir Volkerling

In Attendance:

NRC Staff - Full Meeting:

Group Manager Environmental Services
Chief Executive
Committee Secretary

NRC Staff - Part Meeting:

Biosecurity Senior Programme Manager
Compliance Monitoring Senior Programme Manager
Resource Management Planning and Policy Senior
Programme Manager
Monitoring Programme Manager – Coastal
Biosecurity Specialist
Area Manager – Kaitāia
Environmental Assets Manager
Biodiversity Advisor

The Chairman declared the meeting open at 9.30 am.

Apologies

Moved (Clarkson/Booth)

That the apologies from Martin Hunt, Monty Knight, Paul Dimery, Geoff Gover and Tricia Cutforth for absence be received.

Carried

Declarations of Conflict of Interest

It was advised that councillors should make declarations item-by-item as the meeting progressed.

Confirmation of Minutes: Environmental Management Committee Meeting – 29 June 2015 (Item 1.0)

**Report from Nola Sooner, Committee Secretary.
A771923**

Moved (Brown/Reed-Thomas)

That the minutes of the Environmental Management Committee meeting held on 29 June 2015 be confirmed as a true and correct record.

Waioira Northland Water Progress (Item 2.0)

**Report from Natalie Blandford, Waioira Northland Water Project Manager.
A765891**

Moved (Brown/Clarkson)

1. That the report 'Waioira Northland Water' progress by Natalie Blandford, Waioira Northland Water Project Manager, and dated 6 August 2015, be received.
2. That the nominations of Andy Warren and Jeremy Waldegrave for the two forestry positions and Matt Long for one of two farming positions on the Ngunguru Catchment Working Group be accepted.

Carried

Parliamentary Commissioner for the Environment Report on the NPS Freshwater Management (Item 3)

**Report from Bruce Howse, Group Manager Environmental Services.
A766885**

Moved (Brown/Clarkson)

That the report 'Parliamentary Commissioner for the Environment Report' on the NPS Freshwater Management by Bruce Howse, Group Manager Environmental Services, and dated 28 July 2015, be received.

Carried

Environment Fund and Farm Water Quality Improvement Plan Update (Item 4.0)

Report from Duncan Kervell, Land Programme Manager and Bruce Howse, Group Manager Environmental Services.

A764066

Moved (Carr/Brown)

That the report 'Environment Fund and Farm Water Quality Improvement Plan Update' by Duncan Kervell, Land Programme Manager, and Bruce Howse, Group Manager Environmental Services, and dated 10 August 2015 be received.

Carried

Moved (Booth/Clarkson)

Against (Court)

1. That approval is given to over allocate the 2015/16 Environment Fund budget by up to \$100,000. In the event that withdrawals are less than the budget, then the budget deficit would need to be met from the Land Management Reserve and an adjustment made to the following year's budget allocation.
2. That delegated authority be given to Duncan Kervell, Land Programme Manager, to co-sign the environment fund delegated authority approvals with the NRC Chairman or Environmental Management Committee Chairman.

Carried

Matters arising from 4.0:

Secretarial Note:

The Chairman advised page 38 was included as an administrative error and is not to be considered as part of the agenda item.

River Management Update (Item 5.0)

Report from Joseph Camuso, Rivers Programme Manager.

A769338

Moved (Brown/Volkerling)

That the report 'Rivers Management Update' by Joseph Camuso, Rivers Programme Manager, and dated 6 August 2015 be received.

Carried

Environmental Monitoring for the Period 1–31 July 2015

(Item 6.0)

**Report from Colin Dall, Group Manager Regulatory Services.
A769165**

Moved (Brown/Clarkson)

That the report 'Environmental Monitoring for the Period 1–31 July 2015' from Colin Dall, Group Manager Regulatory Services, dated 6 August 2015, be received.

Carried

Biosecurity Update (Item 7.0)

**Report from Don Mckenzie, Biosecurity Senior Programme Manager.
A770226**

Moved (Carr/Brown)

That the report 'Biosecurity Update' by Don Mckenzie and dated 17 August 2015, be received.

Carried

The Impacts of Black Swan and Canada Geese on Far North Habitats (Item 8.0)

**Report from Don Mckenzie, Biosecurity Senior Programme Manager.
A771107**

Moved (Brown/Clarkson)

That the report 'The Impacts of Black Swan and Canada Geese on Far North Habitats' by Don Mckenzie, Biosecurity Senior Programme Manager, and dated 25 August 2015, be received.

Carried

Moved (Volkerling/Booth)

1. That the committee support an action plan to be developed collaboratively with Far North iwi, Northland Fish and Game, and other stakeholders aimed at reducing wildfowl numbers at vulnerable Far North habitats.
2. A scope of works is developed with independent relevant science providers to cost a full research plan aimed at understanding the impacts of selected wildfowl on Far North habitats, farming and human health.

Carried

Proposed Whangārei Heads Pest Management Committee (Item 9.0)

**Report by Kane McElrea, Biosecurity Programme Manager.
A766952**

Moved (Brown/Clarkson)

1. That the report 'Proposed Whangārei Heads Pest Management Committee' by Kane McElrea, Biosecurity Programme Manager, and dated 17 August 2015, be received.
2. That the Whangārei Heads Pest Management Committee be established as a subcommittee of the Environmental Management Committee.
3. That Cr Paul Dimery be appointed as chairperson of the Whangārei Heads Pest Management Committee.
4. That the draft Whangārei Heads Pest Management Committee Terms of Reference be confirmed.

Carried

Review of Regional Pest Management Plan - Update (Item 10.0)

**Report by Don Mckenzie, Biosecurity Senior Programme Manager.
A769649**

Moved (Carr/Brown)

1. That the report 'Review of Regional Pest Management Plan – Update' by Don Mckenzie, Biosecurity Senior Programme Manager, and dated 7 August 2015, be received.
2. That the committee recommends to council that the notification of the proposed Regional Pest Management Plan be no later than 20 July 2016.

Carried

Update on the Mair Bank Pipi Decline and Ngunguru Shellfish Mortality (Item 11.0)

**Report by Ricky Eyre, Monitoring Programme Manager - Coastal.
A771247**

Moved (Carr/Brown)

That the report 'Update on the Mair Bank Pipi and Ngunguru Shellfish Mortality' by Ricky Eyre, Monitoring Programme Manager – Coastal, and dated 6 August 2015, be received.

Carried

Swamp Kauri – presentation (Item 12.0)

Report by Nola Sooner, Committee Secretary.

A771912

Moved (Brown/Booth)

That the 'Swamp Kauri' report and presentation from Peter Wiessing, Kaitāia Area Manager, be received.

Carried

Agenda items for next Environmental Management Committee Meeting – 27 October 2015 (Item 13.0)

Report by Nola Sooner, Committee Secretary.

A771922

Moved (Carr/Volkerling)

That the Environmental Management Committee members suggest agenda items for inclusion into the agenda for the next Environmental Management Committee meeting on 27 October 2015.

Carried

Conclusion

The meeting closed at 12.29 pm.

ISSUE: Waiora Northland Water Progress

ID: A780580

To: Environmental Management Committee, 27 October 2015

From: Natalie Blandford, Waiora Northland Water Project Manager

Date: 1 October 2015

Report Type:	<input checked="" type="checkbox"/> Normal operations	<input checked="" type="checkbox"/> Information	<input type="checkbox"/> Decision
Purpose:	<input type="checkbox"/> Infrastructure	<input type="checkbox"/> Public service	<input type="checkbox"/> Regulatory function
	<input checked="" type="checkbox"/> Legislative function	<input type="checkbox"/> Annual\Long Term Plan	<input type="checkbox"/> Other
Significance:	<input type="checkbox"/> Triggered	<input checked="" type="checkbox"/> Not Triggered	

Executive Summary:

The purpose of this report is to provide an update on progress with Waiora Northland Water and contributing programmes between 7 August to 30 September 2015.

Legal compliance and significance assessment:

The activities detailed in this report are part of the council's day to day operations and as such are provided for in the council's 2015-2025 Long Term Plan, and are in accordance with the council's decision making process and sections 76-82 of the Local Government Act 2002. The report is therefore of low significance in terms of council's significance policy.

Recommendation:

1. That the report Waiora Northland Water progress by Natalie Blandford, Waiora Northland Water Project Manager and dated 1 October 2015, be received.
2. That Council approve one further community interests' seat on the Ngunguru catchment group.
3. That Council approve a Forest and Bird Protection Society of NZ seat for the Ngunguru catchment group.
That Council approve the following additional nominations for the Ngunguru catchment group:

Nominee	Seat
Cr Paul Dimery	Northland Regional Council
Cr Greg Martin	Whangarei District Council
Willie Wright	Northland Conservation Board
Darlene Buckley	Ngunguru Sandspit Protection Society
Chris Robertson	Tutukaka Coast Ratepayers and Residents Association
Hayley Sharp and Kristi Henare (alternate)	Forest and Bird Protection Society of NZ Inc

Report:

Waioara Northland Water is council's programme to implement the National Policy Statement for Freshwater Management (NPS FM) and progressively improve water management in Northland. The programme comprises three core elements as follows:

- Regional planning
- Catchment specific planning (Priority catchments)
- Operational programmes.

REGIONAL PLANNING

The Proposed Regional Policy Statement (PRPS) and the new regional plan for Northland (under development) implement the regulatory elements of the NPS FM.

Proposed Regional Policy Statement:

The PRPS sets the resource management policy direction for Northland (including the approach to freshwater management).

Key milestones	Update	Next steps
Council decisions	Complete: Notified September 2013	
Appeals	In progress: 16 Appeals lodged - all but 2 matters (GMO & property specific map issue) likely resolved in mediation	<ul style="list-style-type: none">• Environment Court Hearing (Mapping) 5, 6 October 2015• High Court hearing for GMO (February 2016)
Operative RPS	Pending: Freshwater provisions have been resolved and can be implemented in the new regional plan.	Notify operative date (pending Court decisions)

New regional plan

The new regional plan will be the vehicle to address the compulsory elements of the NPS FM and the policy direction in the PRPS - it provides the regional approach to managing freshwater quality and quantity, including:

- Freshwater management units – essentially a suite of 'zones' for managing water quality and water quantity.
- Region-wide water quality objectives and limits (for ecosystem health and human health).
- Region-wide water quantity objectives and limits (minimum flows and allocation limits).
- Identification and management of outstanding water bodies.
- Wetland and sediment management.
- Catchment specific provisions.

Development of the new regional plan is overseen by council's Regional Policy Committee (RPC). An indicative outline of the process and key milestones relating to the freshwater elements of the draft plan is provided below:

Phase	Key milestones	Update	Next steps	By
Plan	All 3 operative plans reviewed.	Complete: Dec 2014	N/A	Completed
Review	Structure / format	Approved in principle by RPC: <ul style="list-style-type: none"> • Single regional plan to replace all 3 operative plans • Simple to use 'rule book' format • Provide for catchment specific sections 	Confirm structure / format	March / April 2016
	Freshwater management units (FMUs)	RPC approved FMUs for rivers	FMUs for lakes & groundwater	Dec 2015
			Special FMUs (e.g. swimming areas / outstanding water bodies)	Feb 2016
	Freshwater objectives / limits	In progress	<ul style="list-style-type: none"> • Water quality objectives & limits (human and ecosystem health) • Water quantity objectives & limits 	Dec 2015
	Plan provisions (including rules and cost / benefit analysis)	In progress	Plan provisions and cost / benefit analysis (including wetland and sediment management)	March 2016
	Catchment specific sections	In progress	(see catchment planning update below)	Mid – 2016
Release draft	Call for stakeholder, tangata whenua and public feedback	Pending	approval by RPC	Mid 2016
Revise draft	Assess feedback & revise plan as needed	Pending	approval by RPC	Mid-2017
Notify	Public notification	Pending	approval by RPC	Mid-2017

Industry and Council Liaison for regional plan development

The Dairy Industry Liaison Group, RMA Northland Forestry Development Group and Drystock Industry Liaison Group have continued to provide advice on water management to inform the new regional plan. A meeting of the Drystock Industry Liaison Group was held 22 September - the discussion included potential options for stock exclusion and sediment management and an overview of freshwater management

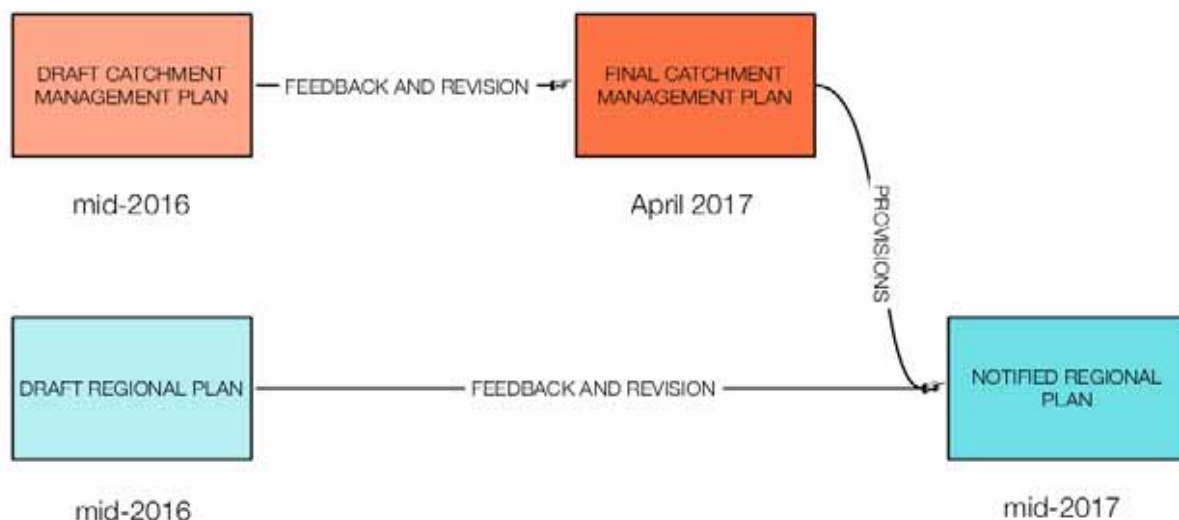
units for rivers. The Dairy Industry Liaison Group is scheduled to meet on 15 October 2015 – the agenda includes stock exclusion (options overview), freshwater management units, sediment reduction and air discharges. A sub-committee of the RMA Forestry Group has been established to consider regional plan issues and a tentative date of 20 October has been scheduled for their next meeting (agenda to be confirmed). Staff have also had regional plan development discussions with district council infrastructure managers.

CATCHMENT PLANNING

The table below provides an outline of the key steps in the development of catchment plans in the five priority catchments and alignment with the development of the new regional plan.

Key Milestones	Description	Indicative timing
Knowledge building	<ul style="list-style-type: none"> • Catchment descriptions • Collation of monitoring data • Understanding the science 	Complete (all 5 established groups)
Identify uses & values	<ul style="list-style-type: none"> • Identify in-water values • Identify uses of water 	Complete (all 5 established groups)
Draft objectives	<ul style="list-style-type: none"> • Draft objectives (outcomes sought): • What? Where? And by when? 	In progress
Test & confirm objectives	<ul style="list-style-type: none"> • Consistency with RPS and NPS FM • Cost / benefit analysis • Revise as needed 	December – February 2016
Test need for catchment specific provisions in draft regional plan	<ul style="list-style-type: none"> • Compare catchment objectives with draft regional plan • Cost / benefit analysis • Identify any additional regulatory measures required 	March 2016
Draft catchment plan	<ul style="list-style-type: none"> • Draft catchment plan approval • Draft catchment plan released for comment / feedback. 	April - June 2016
Incorporate catchment provisions in regional plan	<ul style="list-style-type: none"> • Revise as needed and finalise catchment plan • Final catchment plan approved • Catchment specific provisions included in notified regional plan (as needed) • Catchment plan implementation (ongoing) 	Mid-2017

Once draft catchment plans have been developed and approved, the intention is that they be released for consultation with a particular focus on the relevant catchment (this would occur at the same time the draft regional plan is released in mid-2016 to ensure integration between the two). Feedback from this process will inform revision of the catchment plan, with any regulatory catchment measures then being included in the Proposed Regional Plan when notified in mid-2017 (See diagram below).



Ngunguru Catchment – Update

Five well qualified expressions of interest were received for the Community representative seat on the Ngunguru catchment group; therefore staff recommend that Council approve one further Community seat to maximise the benefit of qualified expertise on the group. Department of Conservation has declined to provide a nominee for the group; however Forest and Bird have belatedly confirmed they would like involvement. Staff recommend that Council approves a further seat on the group for Royal Forest and Bird Protection Society of NZ Inc. Tangata Whenua have requested more time to respond. The first meeting of the Ngunguru catchment group is now scheduled for 11 November 2015. Further nominations for the group will be recommended to the 7 December 2015 Environmental Management Committee meeting for confirmation.

Nominees for the Ngunguru catchment working group to date are as follows:

Nominee	Seat
Cr Paul Dimery	Northland Regional Council
Cr Greg Martin	Whangarei District Council
TBC	Tangata whenua (3 positions)
5 nominees	Community (1 position)
Andy Warren and Jeremy Waldegrave	Forestry (2 positions)
Matt Long	Farming (2 positions)
Willie Wright	Northland Conservation Board
Darlene Buckley	Ngunguru Sandspit Protection Society
Chris Robertson	Tutukaka Coast Ratepayers and Residents Association
Hayley Sharp and Kristi Henare (alternate)	Royal Forest and Bird Protection Society of NZ Inc

Catchment Group Participant Survey

Landcare Research, funded by Ministry of Business, Innovation and Employment, has undertaken the first stage of a two stage survey of collaborative processes across New Zealand. The survey is targeted at participants

and intends to assess the effectiveness of collaborative processes. The first stage survey provides a 'baseline' at early stages in the process with the second stage survey undertaken once the process is largely complete. The Waiora Northland Water priority catchments were included in the first survey and the results are attached (Attachment 1). Landcare Research surveyed participants before priority catchment groups had an opportunity to:

- agree their objectives for freshwater management; or
- get feedback from their communities of interest on, or socialise their freshwater management work.

Hence, the first survey provides a baseline for the second stage (once the process is complete) and is not intended to give a determinative assessment of the effectiveness of the programme or to identify procedural changes.

OPERATIONAL PROGRAMMES

Te Mana o Te Wai Fund Application

The Northland Collaborative Dune Lakes Project with Te Uri o Hau and Te Roroa was unsuccessful in its bid to receive funding from the Te Mana o Te Wai Fund. Staff have approached and are awaiting feedback from the Ministry for the Environment on the application.

Biosecurity - Kai iwi Lakes

- Ongoing weed control being undertaken throughout the domain.
- Biodiversity and pest animal monitoring being carried out by staff and Northtec students.

Hydrology

Water Allocation Calculator

A revised Water Allocation Calculator has been finalised. This Tool calculates consented and permitted allocation for all surface water catchments and groundwater aquifers in Northland. The tool will be used to compare the current level of water allocation with different objectives and allocation limit scenarios.

Catchment Specific Dam Assessment

The Council has developed a methodology that will be used to better account for dam water takes in evaluating total low flow allocation on a catchment by catchment basis. The method estimates an allocation for the dam take based on its effect on instream flow rather than allocation from stored water. The method will be applied to dam takes in high use catchments and is likely to reduce the current estimate of allocation in these areas.

Enviroschools

WaiFencing

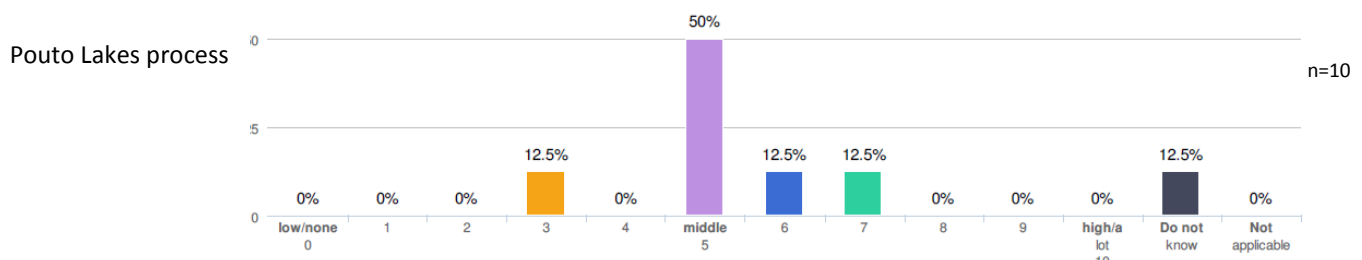
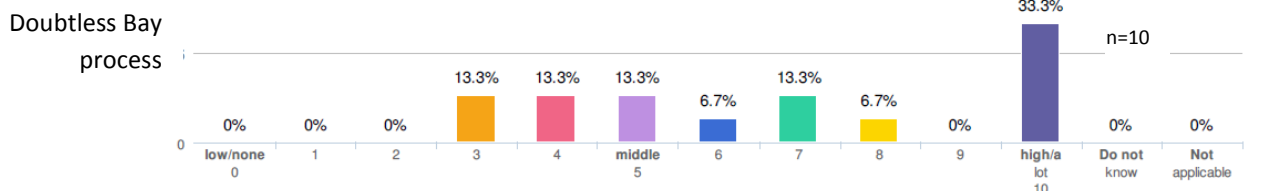
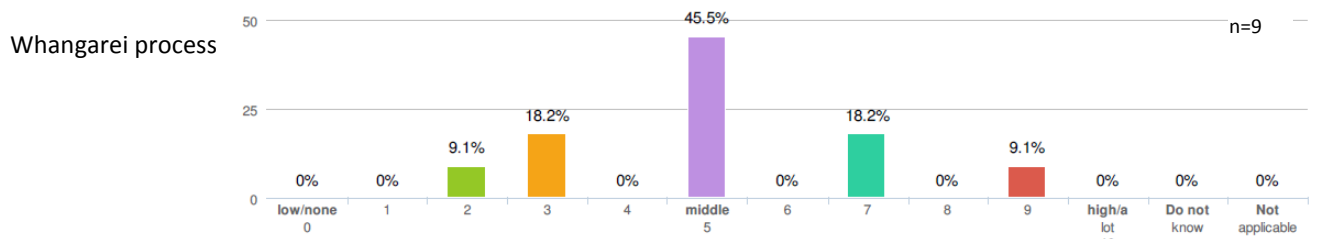
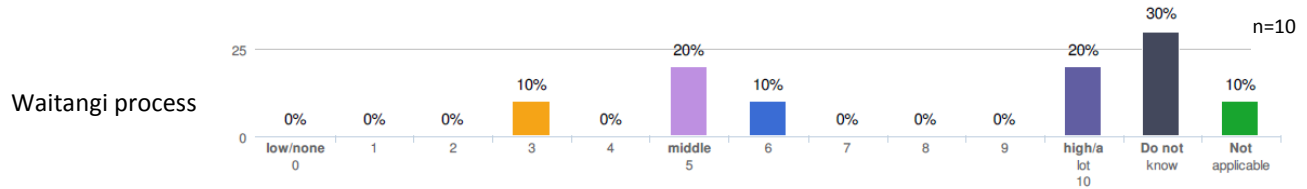
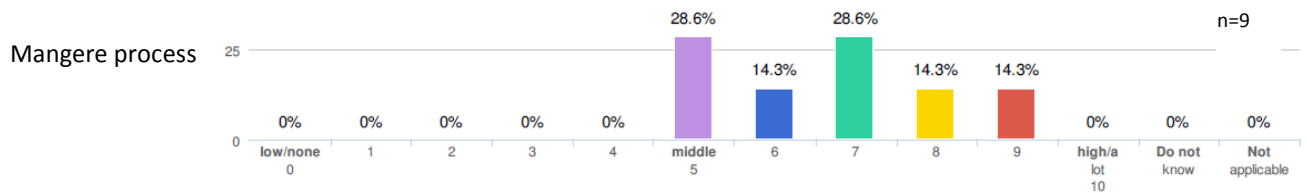
Due to popular demand, a further WaiFencing workshop was held at council's Flyger Road property on 7 September. Students and teachers from Otamatea High School and Ruawai College participated in learning experiences related to the benefits of keeping stock out of waterways and to seven Level 2 NCEA Unit Standards.



- **Secondary sector meeting**

On 24 August, secondary teachers and gateway co-ordinators met at Wildspur Lodge in Taheke. The purpose of the meeting was to reflect upon and further develop EnviroSchools projects including the WaiRestoration components of WaiFencing and WaiNurseries.

Ability to adapt: does the process adapt to new information and changing circumstances?



Some general comments:

Waitangi:

- There is a strong Māori sentiment in the comments about rights of hapū and sharing of management between stakeholders and hapū in the catchment
- Comment about needing to have a collaborative approach from hapū who are Ahi-kaa in the catchment

Mangere:

- Generally more positive responses from the Mangere compared to others

Whangarei:

- Generally seems that participants are happier with the information being presented to them than in other processes

Doubtless Bay:

- There was a wide spread (0-10) in how people rated most questions. Generally get a feel that there is not as much satisfaction with this process than others. Pouto Lakes is similar.

Pouto Lakes:

- Large spread in terms of whether the process is following the procedures set out in the terms of reference (~57% rated this ≤5 or did not know) and that it is meeting established deadlines (~78% rated this ≤5 or did not know). Other processes had more positive responses.
- There was a wide spread (0-10) in how people rated most questions. Generally get a feel that there is not as much satisfaction with this process than other others. Doubtless Bay is similar.
- Comments
 - One respondent noted that they thought the process was being driven by a NRC agenda and there was some resistance to looking through lens that were not in line with the staff plan, and that NRC staff were inflexible at times (could be the same person who made these comments).

ISSUE: Environment Fund & Farm Water Quality Improvement Plan Update

ID: A778192

To: Environmental Management Committee, 27 October 2015

From: Duncan Kervell, Land Manager and Bruce Howse, Group Manager
Environmental Services

Date: 5 October 2015

Report Type:	<input checked="" type="checkbox"/> Normal operations	<input type="checkbox"/> Information	<input type="checkbox"/> Decision
Purpose:	<input type="checkbox"/> Infrastructure	<input type="checkbox"/> Public service	<input type="checkbox"/> Regulatory function
	<input type="checkbox"/> Legislative function	<input checked="" type="checkbox"/> Annual\Long Term Plan	<input type="checkbox"/> Other
Significance:	<input type="checkbox"/> Triggered	<input checked="" type="checkbox"/> Not Triggered	

Executive Summary:

- Year to date **\$879,759.10** of the Environment Fund budget has been allocated to a total of **175** projects.
- The June delegated authority \$114,380.67 - 22 projects which will be funded from the 2015/16 Environment Fund budget.
- The July delegated authority \$171,613.60 - 42 projects.
- The August delegated authority \$143,593.50 - 28 projects.
- The September delegated authority \$98,464.30 - 18 projects.
- The October delegated authority \$188,541.03 – 21 projects.
- Biosecurity projects \$138,166.00 - 44 projects.
- Soil Conservation was \$25,000.00.

Legal compliance and significance assessment:

The activities detailed in this report are provided for in the council's 2015-2025 Long Term Plan and as such are in accordance with the council's decision-making process and sections 76-82 of the Local Government Act 2002.

In relation to section 79 of the Local Government Act 2002, this issue is considered to be of low significance.

Recommendation(s):

That the report Environment Fund & Farm Water Quality Improvement Plan Update by Duncan Kervell, Land Programme Manager and Bruce Howse, Group Manager Environmental Services, and dated 5 October 2015 be received.

ITEM: 5

Page 2 of 2

Environment Fund Update 2015/16

The delegated authorities for September and October are **attached**. Year to date \$879,759.10 of the Environment Fund budget has been allocated (to a total of 175 projects).

Table 2. Environment Fund funding allocation for 2015/16

Delegated Authority	Land/Biosecurity	NO of Projects	Allocation	Budget
1 – June 2015	Land	22	\$ 114,380.67	
2 – June 2015	Biosecurity	44	\$ 138,166.00	
3 – July 2015	Land	42	\$ 171,613.60	
4 – August 2015	Land	28	\$ 143,593.50	
5 – September 2015	Land	18	\$ 98,464.30	
6 – October 2015	Land	21	\$ 188,541.03	
Soil Conservation			\$ 25,000.00	
Allocation to date			\$ 879,759.10	
Budget	Land			\$ 825,000
	Biosecurity			\$ 75,000
Total Budget				\$900,000.00
Less allocation to date				\$ 879,759.10
Balance Remaining				\$ 20,240.90

Farm Water Quality Improvement Plans (FWQIP) 1 July 2015 to 30 September 2015

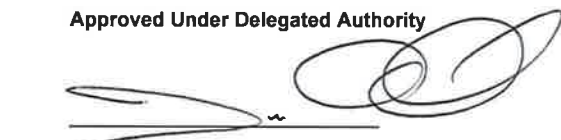
Year to date a total of 47 FWQIP's have been commenced , 26 FWQIP's have been completed, with a further 83 in progress.

Status of FWQIP	Farm Type	Far North	Kaipara	Whāngārei	Total
Plans commenced : 1 July 2015 to 30 September 2015	Dairy	1	0	1	2
	Drystock	19	12	5	36
	Lifestyle	5	0	4	9
		25	12	10	47
Plans completed: 1 July 2015 to 30 September 2015	Dairy	1	1	2	4
	Drystock	7	5	4	16
	Lifestyle	2	0	4	6
		10	6	10	26
Plans still in progress	Dairy	4	8	3	15
	Drystock	27	21	11	59
	Lifestyle	5	0	4	9
		36	29	18	83

Delegated Authority Recommendations - September 2015

EFD No.	FWQIP	NRC STAFF MEMBER	Applicant	Previous Funding Year(s)	Previous Funding Amount(s)	Farm Type	Funding Stream	Priority Catchment	District	Brief Project Description	Amount Recommended
APP.037861	339	KWE	June Boulton	N/A		Drystock	Water Quality		Kaipara	Fencing	\$ 1,341.00
APP.037914	361	KWE	Raewyn Madden	N/A		Drystock	Water Quality		Kaipara	Fencing & Planting	\$ 1,242.00
APP.037137.02.01	97	KWE	James Robert Parsons	2012-14	\$ 11,338.00	Drystock	Water Quality		Kaipara	Fencing & Planting	\$ 18,936.00
APP.037882	356	LOD	David Roland Fife	N/A		Drystock	Water Quality		Far North	Fencing	\$ 2,465.00
APP.037917	341	LOD	Michael Leahy	N/A		Drystock	Water Quality		Whangarei	Fencing	\$ 2,825.00
APP.037930	130	LOD	Keith Clarke	N/A		Drystock	Water Quality		Whangarei	Fencing	\$ 700.00
APP.036938.02.01	172	LOD	Hoddi Limited	2013	\$ 4,424.00	Dairy	Water Quality		Whangarei	Fencing	\$ 4,750.00
APP.037036.02.01	95	LOD	Bruce Shepherd	2014	\$ 3,440.50	Drystock	Water Quality		Far North	Fencing	\$ 4,436.60
APP.037877	360	DEJ	Michael Murphy	N/A		Drystock	Water Quality		Whangarei	Fencing	\$ 2,009.00
APP.037939	364	DEJ	Bruce Campbell	N/A		Drystock	Water Quality		Far North	Fencing	\$ 2,262.00
APP.037212.02.01	132	DEJ	Crowebar Farms Ltd	2014	\$ 3,267.00	Dairy	Water Quality		Far North	Fencing	\$ 2,166.00
APP.151480.03.01	N/A	LAS	Taipa Coastcare Group	2014	\$ 1,210.00	Coastcare	Dunes		Far North	Planting	\$ 3,262.00
APP.037034.02.01	259	ASE	Lynn Brothers Farming	2014	\$ 7,000.00	Drystock	Water Quality		Far North	Fencing	\$ 13,425.00
APP.037949	367	ASE	Beach Road Farms 1996 Limited	N/A		Drystock	Water Quality	Waitangi	Far North	Fencing	\$ 10,000.00
APP.037954	369	ASE	Robin Gemmell & Gilliam Harper	N/A		Lifestyle	Water Quality		Far North	Fencing	\$ 2,530.00
APP.037950	368	ASE	Bee Sensual Honey & Skincare	N/A		Drystock	Water Quality	Doubtless Bay	Far North	Fencing & Planting	\$ 4,194.00
APP.037352.02-01	302	ASE	Ngakahu Whanau Whenua	N/A		Drystock	Water Quality		Far North	Fencing	\$ 6,920.70
APP.037033.02.01	260	ASE	Lynn Brothers Farming Ltd (Haruru)	N/A		Drystock	Water Quality	Waitangi	Far North	Fencing	\$ 15,000.00
TOTAL										\$ 98,464.30	

Approved Under Delegated Authority


Duncan Kervell
Land Manager

Date: 07/09/2015

Summary Sighted by Councillor


Bill Shepherd
Chairman - Northland Regional Council

Date: 07/09/15

Delegated Authority Recommendations - October 2015											
EFD No.	FWQIP	NRC STAFF MEMBER	Applicant	Previous Funding Year(s)	Previous Funding Amount(s)	Farm Type	Funding Stream	Priority Catchment	District	Brief Project Description	Amount Recommended
APP.038006	385	ASE	Paua Station (Josh Williamson - Manager)	2012-13	\$ 47,182.00	Drystock	Biodiversity		Far North	Fencing	\$ 20,000.00
APP.037999	210	ASE	Te Huia Farming Trust	2012-14	\$ 18,996.00	Drystock	Water Quality		Far North	Fencing	\$ 12,390.00
APP.036647.03.01	219	ASE	Waireia Trust	2013-14	\$ 12,905.00	Drystock	Water Quality		Far North	Fencing	\$ 20,000.00
APP.037992	378	ASE	Mark Dugmore (Dugmore FF Trust)	N/A		Drystock	Water Quality		Far North	Fencing	\$ 7,480.00
APP.037985	377	ASE	Jill Mortensen	N/A		Lifestyle	Water Quality		Far North	Fencing	\$ 2,160.00
APP.037988	376	ASE	JB Martin & HA Linssen P/Ship	N/A		Drystock	Water Quality		Far North	Fencing	\$ 3,465.00
APP.037973	380	ASE	Te Rangi Station	2012	\$ 8,912.00	Drystock	Water Quality		Far North	Fencing	\$ 16,965.00
APP.037978	379	ASE	Windybrae	N/A		Lifestyle	Water Quality		Far North	Fencing	\$ 5,000.00
APP.038002	332	DUK	Rhys Nolan	N/A		Drystock	Water Quality		Far North	Fencing	\$ 1,344.20
APP.037161.02.01	N/A	DUK	Landcorp Farming Limited (Kapiro)	2014	\$ 6,565.00	Drystock	Water Quality		Far North	Fencing	\$ 17,914.50
APP.037341.02.01	303	DUK	Te Kura o Hato Hohepa Te Kamura School			Drystock	Water Quality		Far North	Planting	\$ 990.00
APP.036591.02.01	217	BRG	Owen Randal Clements	2013	\$ 2,880.00	Drystock	Water Quality		Kaipara	Fencing	\$ 14,800.00
APP.036755.02.01	228	BRG	David Linton (Kaipara View Farming Ltd)	2014	\$ 7,000.00	Drystock	Water Quality		Kaipara	Fencing	\$ 7,750.00
APP.037023.04.01	262	BRG	Allister McCahon; Upson Downs Ltd	2014-15	\$ 7,000.00	Drystock	Water Quality		Kaipara	Fencing	\$ 11,072.00
APP.036356	133	PGR	Simon Woodcock & Maree Jones	N/A		Drystock	Biodiversity		Kaipara	Fencing	\$ 4,533.33
APP.037959	366	PGR	Annette Myrtle Williams	N/A		Drystock	Water Quality		Kaipara	Fencing	\$ 14,327.50
APP.037986	381	PGR	The Proprietors of Te Uri O Hau-Maori Incorporation/Steve Nathan	N/A		Drystock	Biodiversity		Kaipara	Fencing & Water Tank	\$ 11,379.00
APP.037970	N/A	LAS	Whangaruru South Residents & Ratepayers Association	N/A			Coastal-Dunes		Far North	Dune planting	\$ 5,330.00
APP.037018.03.01	N/A	LAS	Margaret Hughes - Te Whanau Whero Coastal Care	2014	\$ 4,258.00		Coastal-Dunes		Whangarei	Dune planting	\$ 2,670.50
APP.151882.03.01	N/A	LAS	Ahipara Community Coastcare	2013	\$ 4,215.00		Coastal-Dunes		Far North	Dune planting	\$ 3,970.00
APP.037256.02.01	N/A	DEJ	W & S Pepper Limited	N/A		Dairy	Water Quality		Whangarei	Fencing	\$ 5,000.00
TOTAL											\$ 188,541.03

Approved Under Delegated Authority

Duncan Kervell

Land Manager

Summary Sighted by Councillor

Craig Brown

Councillor - Northland Regional Council

Date:

Date:

09/10/2015

ISSUE: Soil Conservation Programme Update

ID: A784804

To: Environmental Management Committee, 27 October 2015

From: Duncan Kervell, Land Manager

Date: 2 October 2015

Report Type:	<input checked="" type="checkbox"/> Normal operations	<input type="checkbox"/> Information	<input type="checkbox"/> Decision
Purpose:	<input type="checkbox"/> Infrastructure	<input type="checkbox"/> Public service	<input type="checkbox"/> Regulatory function
	<input type="checkbox"/> Legislative function	<input checked="" type="checkbox"/> Annual\Long Term Plan	<input type="checkbox"/> Other
Significance:	<input type="checkbox"/> Triggered	<input checked="" type="checkbox"/> Not Triggered	

Executive Summary:

This paper provides an update of the NRC Soil Conservation Programme, describing the programme implementation and some of the initiatives, science and modelling tools that will help inform and prioritise the regions long term soil conservation programme.

Legal compliance and significance assessment:

The activities detailed in this report are provided for in the council's 2015-2025 Long Term Plan and as such are in accordance with the council's decision-making process and sections 76-82 of the Local Government Act 2002.

In relation to section 79 of the Local Government Act 2002, this issue is considered to be of low significance

Recommendation(s):

That the report Soil Conservation Programme Update by Duncan Kervell, Land Manager and dated 2 October 2015 be received.

Soil Conservation Programme

The NRC land management team has 1 (full time equivalent) FTE for soil conservation projects, and 5 FTE Land Management Advisors in which soil conservation is part of their roles.

Supplying soil conservation planting materials and advice at NRC has a long history since the Catchment Commission days, where multiple thousands of poplar poles were delivered to landowners. This approach was reinvigorated in 2011. Since then we have been increasing our supply of poplar and willow poles (Table One)

Table One: Soil conservation planting materials delivered since 2011.

Year	# Projects	# Poplars 3m poles	# Willows 1m stakes
2011	37	3088	2800
2012	79	2170	5074
2013	61	2124	3690
2014	100	4200	4060
2015	85	4139	1684
Total	362	15721	17308

A five year soil conservation implementation plan (2015-2020) has been developed to focus strategic direction, resources, build partnerships and gain supporting science to coordinate and prioritise soil conservation work streams within the region.

Three main work streams include 1) An enhanced NRC soil conservation programme 2) NRC soil conservation nursery and 3) MPI funded: Kaipara Catchment Hill Country Erosion Fund Project

In 2012 NRC started the development of a poplar and willow nursery at Flyger road, Mata. In 2015/16 staff are progressing the third phase of development and are considering a fourth year of development in 2016/2017, to enable a longer rotation and an increased supply.

Since 2012 sustainable land management and environmental farm planning has been delivered by NRC through the Farm Water Quality Improvement Plans (FWQIP's) programme and advice are given by land management advisors.

To date 383 FWQIP's have been completed with close to a further 100 in progress, and over 500 Efund projects have taken place. These include fencing and stock exclusion projects, wetland stock exclusion & wetland habitat restoration and specific soil conservation planting projects on properties.

All farm plans, make tailored recommended actions to individual properties, and identify critical source areas of sediment. Sediment is a diffuse pollutant often originating from small hotspots and high traffic areas, to more serious eroded soil sources from major slips and earthflows on properties with high erosion susceptibility and connectivity to river and harbours.

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Incentivising good practice on farm through recommendations within farm plans and soil conservation measures are channelled through the Efund via subsidised soil conservation planting materials. Landowners are assisted with their soil conservation projects with specific planting plans and advice & recommendations given through the FWQIP's.

Since 2012 the NRC Efund has provided over 500 projects and circa \$2.2 million funding (Table Two), all of which have reduced pressure on waterways, a significant source of sediment, or excluded stock from areas to be planted for soil conservation projects. Efund projects are also protecting and enhancing wetlands which are the natural filters of sediment within river systems and reduce the amount of sediment flowing into our sensitive harbours. The existing farm plans are covering approximately 10% of Northland's land area.

Table Two: FWQIP and EFunds progress since 2012.

Year	No. of FWQIPs Completed	No of Efunds	Efunds for Land Management (including Soil Conservation) \$
2012/13	88	80	\$519,114
2013/14	138	181	\$603,434
2014/15	106	133	\$537,633
2015/16 (to date)	51	110	\$553,052

Soil Conservation Programme and Land Use Change

Sustainable land management is relying on informed best practise management of particular land types. In some cases a change in land use can be both beneficial for farm productivity and environmental outcomes. Through our Land programmes we are actively promoting and advising land use change to plantation forestry or retirement of erosion prone land where appropriate.

In 2014 NRC commissioned a feasibility study:

WHERE IN NORTHLAND WILL PRODUCTION FORESTRY BE A MORE SUSTAINABLE FORM OF LAND USE?

Identification of land that may be planted in forestry to achieve environmental and commercial returns

Abstract

This project involves identifying primarily pastoral land within land use capability sub-classes some 4e, 6e and easier 7e on which pastoral farming is marginally economic because of low financial returns relative to the costs of production, farmland is being or has been invaded by problem weeds, and/or is subject to soil erosion. On this land, commercial forestry will be both economically and environmentally more sustainable.

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NRC through the Land Management Team aim to build on this work and actively promote the afforestation of marginal hill country that has been identified in this feasibility study. This direction has been reinforced with the re-opening of Ministry of Primary Industries Afforestation Grant Scheme (AGS).

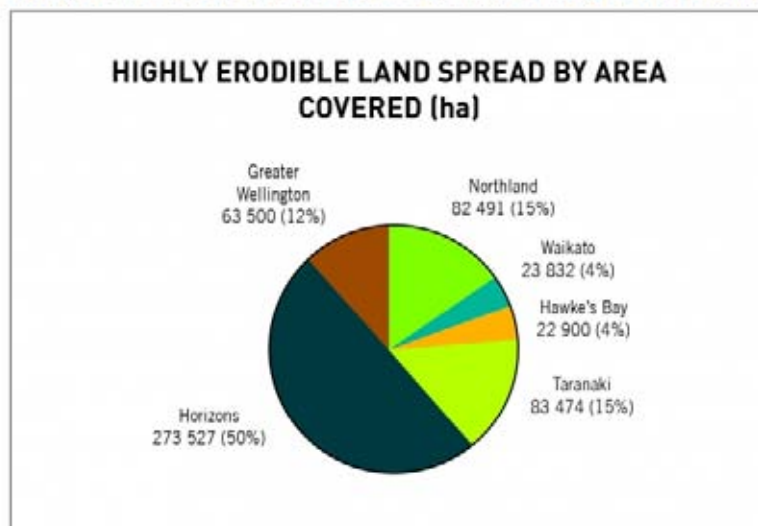
This AGS grant scheme provides landowners a \$1,300 a hectare grant for afforestation of erosion prone land. NRC aims to further promote the AGS and facilitate Northland landowners to put good quality projects forward.

New Soil Conservation Project and Initiatives

Kaipara Hill Country Project

In July 2015, NRC gained a 15% share of a contestable four year Sustainable Land Management Hill Country Erosion Programme for our Kaipara Hill Country Erosion Project.

2015/16 allocation of funding for SLM Hill Country Erosion Fund



The Kaipara Hill Country Erosion project targets 82,500ha of hill country at risk of erosion in Northland's part of the Kaipara Harbour catchment. The programme will identify erosion-prone hill country in the catchment and work with landowners to implement sustainable land management practices via one on one advice, farm plans and subsidised soil conservation planting. This will build on NRC's existing Farm Water Quality Improvement Plan (FWQIP) programme and Environment Fund supported works in the catchment.

This four year \$665,998 plan, will provide for two new land management advisors to work with landowners to deliver farm plans and recommend sustainable land management practices.

Table Three: Detail of Kaipara Hill Country project, milestones and budgets.

Year	No	Due date	Milestone description	Activities undertaken	Deliverables/evidence of completion	SLM funding
2015/16	1	21-Oct-15	Project scoping	<ul style="list-style-type: none"> • GIS identification of erosion prone land, property ownership & initial target properties 	Shapefiles of EPL for KHCEF area, contact information for landowners compiled	\$14,500
	2	21-Mar-16	Field survey	<ul style="list-style-type: none"> • Field visits to selected target areas, confirm ownership, land status & current LM practices • Survey previous soil con projects, assess current management 	Identified & initiated relationships with landowners of 6000ha erosion prone land	\$72,250
	3	21-Jun-16	Initial economic investigation & info transfer	<ul style="list-style-type: none"> • Identify landowners with areas suited to land-use change & run economics • Field day/workshop information transfer 	Results of economics of retirement for one property Fieldday/workshop held	\$50,750
2015/16 Total outputs						\$137,500
2016/17	4	21-Aug-16	Farm survey & plans	Survey & farm plans	1500 ha under plans (*and/or 5 plans completed)	\$33,000
	5	21-Nov-16		<ul style="list-style-type: none"> • Survey & farm plans • Poplar trial research/silvaculture 	Further 1500ha KHC under plans *	\$35,000
	6	21-Feb-17		<ul style="list-style-type: none"> • Survey & farm plans • Poplar trial silvaculture 	Further 1500ha*	\$35,000
	7	21-Jun-17	Implementation works contracted & information transfer	<ul style="list-style-type: none"> • Farms plans • Technical docs/extension/advice on maturing soil con projects 	<ul style="list-style-type: none"> • Total 6000 ha under plans for 2016/17 and/or 20 plans completed • Farm field day or technical doc on management of soil con trees as appropriate • Supply and planting contracts in place for 3600 poplar poles 	\$73,166
2016/17 Total outputs						\$176,166
2017/18	8	21-Aug-17	Farm survey & plans	Survey & farm plans	1500 ha under plans (*and/or 5 plans completed)	\$33,000
	9	21-Nov-17		<ul style="list-style-type: none"> • Survey & farm plans • Poplar trial research/silvaculture 	Further 1500ha KHC under plans *	\$35,000
	10	21-Feb-18		<ul style="list-style-type: none"> • Survey & farm plans • Poplar trial silvaculture 	Further 1500ha*	\$35,000
	11	21-Jun-18	Implementation works contracted & information transfer	<ul style="list-style-type: none"> • Farms plans • Technical docs/extension/advice on maturing soil con projects 	<ul style="list-style-type: none"> • Total 6000 ha under plans for 2016/17 and/or 20 plans completed • Farm field day or technical doc on management of soil con trees as appropriate • Supply and planting contracts in place for 3600 poplar poles 	\$73,166
2017/18 Total outputs						\$176,166
2018/19	12	21-Aug-18	Farm survey & plans	Survey & farm plans	1500 ha under plans (*and/or 5 plans completed)	\$33,000
	13	21-Nov-18		<ul style="list-style-type: none"> • Survey & farm plans • Poplar trial research/silvaculture 	Further 1500ha KHC under plans *	\$35,000
	14	21-Feb-19		<ul style="list-style-type: none"> • Survey & farm plans • Poplar trial silvaculture 	Further 1500ha*	\$35,000
	15	21-Jun-19	Implementation works contracted & information transfer	<ul style="list-style-type: none"> • Farms plans • Technical docs/extension/advice on maturing soil con projects 	<ul style="list-style-type: none"> • Total 6000 ha under plans for 2016/17 and/or 20 plans completed • Farm field day or technical doc on management of soil con trees as appropriate • Supply and planting contracts in place for 3600 poplar poles 	\$73,166
2017/18 Total outputs						\$176,166
TOTAL SLM PROGRAMME FUNDING						\$665,998

Modelling Soil Erosion and Sediment in Northland:

Sediment budgets within a catchment are made up from many factors (see Figure One), all of which are difficult to measure as sources and amounts vary for different land types, land management and under different weather events.

NRC has commissioned Landcare Research to undertake SEDNET modelling to identify the land most vulnerable to soil erosion and estimate the amount of soil erosion. (Figure Two). This will allow us to proactively target our soil conservation priorities over the short to mid-term.

Figure One: Eroded soil and suspended sediment budgets.

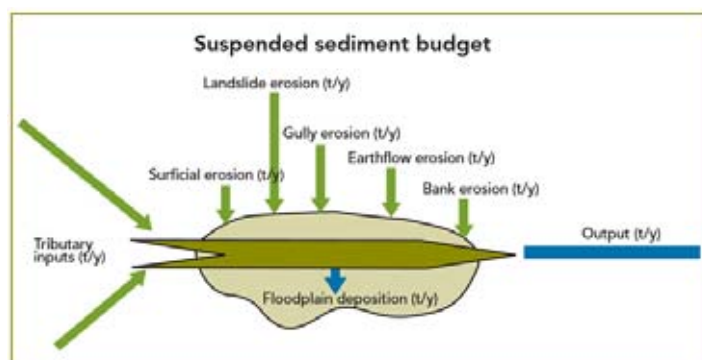
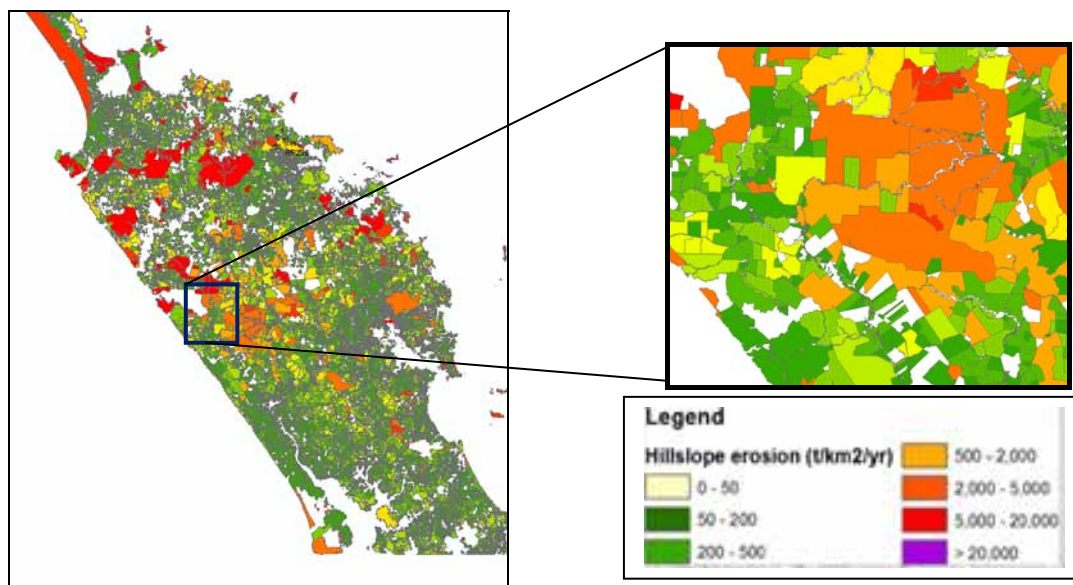


Figure Two: Illustration of Draft outputs from SednetNZ: Northland



The Outputs that NRC will receive from the SEDNET modelling are:

- SedNetNZ and NZEEM construct mean annual sediment budgets for regional scale (tn/km²/yr) down to farm scale (kg/ha/yr).
- Identifies highest risk areas of hill slope sediment generation.
- Estimates total sediment loss from each catchment.
- Intersect farm polygons with hillslope erosion to estimate sediment loads from each farm in the region.
- Run selected farm plan scenarios to identify prioritisation for reducing sediment loads.
- Run bank erosion scenarios (various proportions of riparian fencing) for Kaipara harbour catchment.

ISSUE: River Management Update

ID: A782734

To: Environmental Management Committee, 27 October 2015

From: Joseph Camuso, Rivers and Natural Hazards Manager

Date: 28 September 2015

Report Type:	<input checked="" type="checkbox"/> Normal operations	<input checked="" type="checkbox"/> Information	<input type="checkbox"/> Decision
Purpose:	<input checked="" type="checkbox"/> Infrastructure	<input type="checkbox"/> Public service	<input type="checkbox"/> Regulatory function
	<input type="checkbox"/> Legislative function	<input type="checkbox"/> Annual\Long Term Plan	<input type="checkbox"/> Other
Significance:	<input type="checkbox"/> Triggered	<input checked="" type="checkbox"/> Not Triggered	

Executive Summary:

- Resource consents for the Kerikeri and Awanui Scheme continue to be the team's focus.
- The Kotuku Street Dam is nearing completion with work concentrated on the true right (Southern) emergency spillway.
- Tenders for annual maintenance works for the Awanui and Kaihu Rivers are live on GETS.
- Some non-weather dependent work is underway for the minor rivers work programme.

Legal compliance and significance assessment:

The council activities detailed in this report are provided for in activities described in the council's 2015-2025 Long Term Plan and as such are in accordance with the council's decision making process and sections 76-82 of the Local Government Act 2002. This matter is considered to be of low significance, as the report is only provided to be received for information.

Recommendation:

-
1. That the report River Management Update by Joseph Camuso, Rivers and Natural Hazards Manager and dated 28 September 2015 be received.
 2. That the minutes of the following River Liaison Committee meetings be received:
 - a. Awanui River Liaison Committee, 9 September 2015
 - b. Awanui River Liaison Committee, 24 September 2015
-

Report

Whangarei

Kotuku Dam Update

The majority of the work over the past couple of months has been focused on the true right emergency spillway. The landscaping for the Kotuku Dam revegetation has been completed for this planting season.

The following is required to complete the Kotuku Dam:

- Complete true right emergency spillway;
- Complete dam embankment approximately 1 meter lift to finish RL 67.2;
- Install precast wave wall on top of dam embankment ;
- Install services to 22 and 24 Kotuku Street (Road access, sewer, electricity, telecom etc.);
- Re-design and install barriers true left spillway (due to keeping 22 and 24 Kotuku Street for rental properties);
- Rock – rip-rap for the outlet structure;
- General tidy up of site (cut-off drain re-design and install, design and install a weep drain from upper retaining wall to right emergency spillway;
- Long term monitoring programme – following from dam management plan.



Kotuku dam 28 September 2015, work continuing on the right hand emergency spillway.

Awanui

NRC received five submissions on the resource consent for modifying the Whangatane Spillway weir intake. There were two submissions in opposition, one in regards to restricted access across the spillway in flood events and one regarding to local drainage issue. Staff have met with the submitters and have resolved their concerns. A decision is expected by early November.

The annual scheme maintenance tender is advertised and closes on 21 October. The tender for a stock crossing bridge is live on GETS and will close 12 November. The tender for the Whangatane Spillway Weir Lowering is live on GETS and will close 12 November.

Kaeo-Whangaroa

Staff have drafted a proposed works programme and plan to present this to the River Liaison Committee at a meeting in November.

Kerikeri-Waipapa

A decision on the resource consent applications for the spillway scheme is expected in October. Staff continue to engage with the major landowner impacted by the scheme with the aim of achieving a negotiated settlement.

The tender for the Cobham Road Spillway closed, however the tender price came in significantly higher than the engineer's estimate, staff are re-evaluating options and will present this to the River Liaison Committee for consideration.

Kawakawa – Taumarere

Seven potential options for alleviating the flooding in the Otiria – Moerewa area have been identified by staff. FNDC have expressed a willingness to lead on two of these options as they would improve urban stormwater drainage.

A meeting with NZTA, KiwiRail and FNDC is scheduled for 7 October to chart a way forward in relation to further investigations and consultation. Staff are considering the establishment of a River Management Liaison Committee for this catchment.

Kaihu

The Kaihu River model upgrade is progressing. NRC has now provided all survey datasets for project completion. Model calibration results are due to be delivered shortly.

Minor Rivers Works

Work is underway in catchments where ground conditions are good. The table of minor river works for the Year 2015/16 is shown below.

Awanui	Bells Hill drain installation
	Bells Hill modelling revision and management option report
	Bells Hill drain cleaning/Inclinometer reading
Waitangi	Lilly Pond Large Pines, Puriri, Willows removal
	Turntable Hill Extraction - Liaise with OPUS/NZTA for cost share
Waiaruhe	Tree Removal adjacent to Puketona junction near Top Energy depot

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Waiomio	Willows/Debris Removal
Otiria/Moerewa	Willow removal upstream Pokapu Bridge - mulch/prune sides of high pass spillway
Omanaia	Machine clean weeds 300 meters downstream of Duddy's Road to reduce road flooding
Mangatoa Stream	SH12 Kaikohe, corner sediment extraction
	Timber Extraction along SH 12 breaching roadside stopbanks
Waima	Open Left Span of SH Bridge (Liaise with Gordon Absolum)
Ngunguru	Willows/Debris Removal
Otaika	Willows/Sediment Removal

2015 LIDAR Project

New Zealand Aerial Surveys have delivered LIDAR outputs for the Dargaville – Wairoa valley and Paparoa areas. These are now being used for the extension of the Kaihu flood model, and the coastal flood hazard assessment. Staff are working with the NRC Economist to build partnerships and investigate funding sources to initiate a region wide LIDAR survey.

OTHER BUSINESS

Following discussion on the creation of an easement with the construction of a Bridge on Malcolm and Roger Mathews properties the committee resolved that:

Resolved: Staff are to secure an easement to allow scheme access and future upgrades to the scheme.

Mrs King

Mr May

Discussion was held on a resource consent application for Mathews Implement Shed 6055 State Highway 10. Staff are to investigate the implications on the scheme and make any relevant submissions to FNDC.

Meeting closed 11:35am

**ISSUE: Environmental Monitoring for the period
1 – 30 September 2015**

ID: A784080

To: Environmental Management Committee Meeting, 27 October 2015

From: Colin Dall, Group Manager Regulatory Services

Date: 2 October 2015

Report Type:	<input checked="" type="checkbox"/>	Normal operations	<input checked="" type="checkbox"/>	Information	<input type="checkbox"/>	Decision
Purpose:	<input type="checkbox"/>	Infrastructure	<input type="checkbox"/>	Public service	<input checked="" type="checkbox"/>	Regulatory function
	<input checked="" type="checkbox"/>	Legislative function	<input checked="" type="checkbox"/>	Annual\Long Term Plan	<input type="checkbox"/>	Other
Significance:	<input type="checkbox"/>	Triggered	<input checked="" type="checkbox"/>	Not Triggered		

Executive Summary:

The purpose of this report is to provide an update on council's monitoring and compliance work for the period 1 – 30 September 2015. It concludes with the recommendation that the report be received.

Attachment 1 shows a graph of the number and type of environmental incidents received during the reporting period compared with the 10 year mean for that period, and a graph of the number of compliance assessments made during the reporting period summarised by type.

Attachment 2 contains tables giving details of activities which have been monitored and found to have more than minor environmental effects, and a table summarising the State of Environment monitoring undertaken during the reporting period.

Legal Compliance and Significance Assessment:

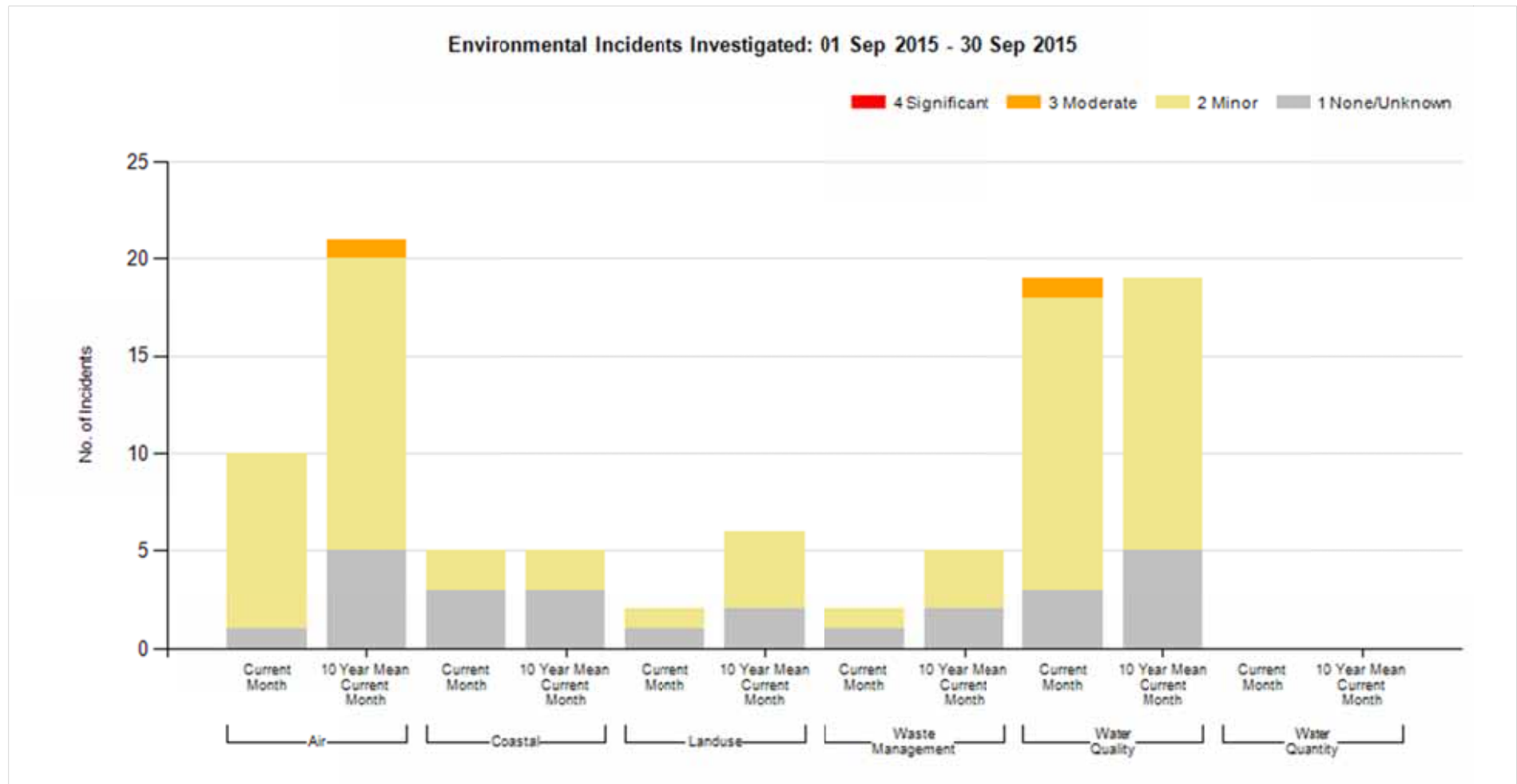
The receiving of this report is provided for in the council's 2015-25 Long Term Plan, meets the council's obligations under section 35 of the Resource Management Act 1991, and is in line with the council's decision making process and sections 76-82 of the Local Government Act 2002.

In relation to section 79 of the Local Government Act 2002, this issue is considered to be of low significance under Council policy because the report does not seek a decision other than that information be received.

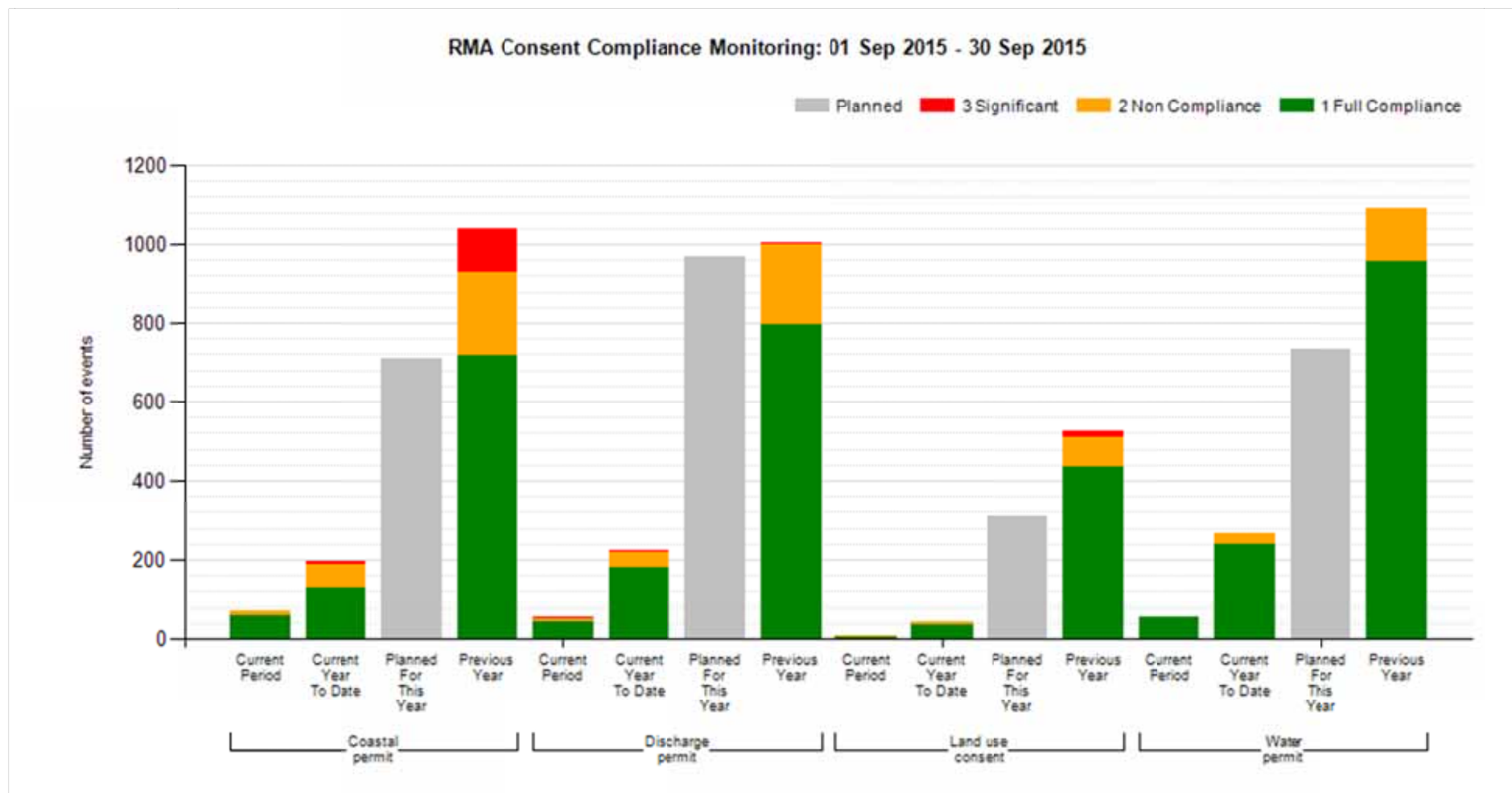
Recommendation:

That the Environmental Monitoring report for the period 1 – 30 September 2015 from Colin Dall, Group Manager Regulatory Services, dated 2 October 2015 be received.

Environmental Incidents Investigated: 1 – 30 September 2015



Resource Consent Compliance Monitoring: 1 – 30 September 2015



Attachment 2 to Item 8

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ABBREVIATIONS KEY

WDC	Whāngārei District Council	FNDC	Far North District Council	KDC	Kaipara District Council	DOC	Department of Conservation
NPC	Northland Port Corporation	NZRC	NZ Refining Company	NRC	Northland Regional Council	FNHL	Far North Holdings Limited
CH	Consent Holder	STS	Sewage Treatment System	POD	Point of Discharge	PA	Permitted Activity
ESCP	Erosion and Sediment Control Plan	RAQP	Regional Air Quality Plan	RWSPN	Regional Water and Soil Plan for Northland		
RC	Resource Consent	CMA	Coastal Marine Area	RCPN	Regional Coastal Plan for Northland		

SIGNIFICANT NON-COMPLIANT EVENTS

DISCHARGES TO WATER OR LAND

Date	Consent Reference No.	Name	Description	Notes
02/09/2015	REG.001116.01	Kaipara District Council	Kaiwaka Sewage Treatment System	<ul style="list-style-type: none"> Water quality test results were outside RC limits.
04/09/2015	REG.017843.01	Waipapa Body Corporate	Retail complex @ Klinac Lane, Waipapa	<ul style="list-style-type: none"> Discharge from effluent soakage field entered a stormwater drain. Water quality test results were outside RC limits. Formal enforcement action taken.

FARM DAIRY EFFLUENT DISCHARGES – CONSENTED

Date	Consent Reference No.	Name	Description	Notes
18/08/2015	REG.008122.01	Matauri Bay Dairies Trust	FDE 459 at Matauri Bay Road, Kaeo	<ul style="list-style-type: none"> Water quality test results were outside RC limits.
20/08/2015	REG.009215.01	DKH Farming Trustee Co Limited	FDE 541 at Waiare Road, Ōkaihau	<ul style="list-style-type: none"> Effluent discharged via an open hose to land.
21/08/2015	REG.008822.01	Ōkaihau Dairies Limited	FDE 550 at Signals Road, Ōkaihau	<ul style="list-style-type: none"> Effluent from an irrigator discharged to water.

Attachment 2 to Item 8

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Date	Consent Reference No.	Name	Description	Notes
24/08/2015	REG.012381.01	Anglesea Consulting Limited	FDE 8483 at Avoca East Road, Avoca	<ul style="list-style-type: none"> Untreated effluent discharged via a stormwater bypass to water.
27/08/2015	REG.011332.01	Ngamaia Rua Lands Limited	FDE 811 at Otatau Road, Taheke	<ul style="list-style-type: none"> Effluent from an irrigator caused excessive ponding and overland flow, and was likely to discharge to water.
28/08/2015	REG.009734.01	McKenzie C & F	FDE 842 at Mataraua Road, Kaikohe	<ul style="list-style-type: none"> Effluent from a pond discharged via a broken transfer pipe to land and to water.
01/09/2015	REG.011766.01	Wilson A A & J C	FDE 2025 at Kerr Road, Whāngārei Heads	<ul style="list-style-type: none"> Effluent from ponds discharged to water without RC.
02/09/2015	REG.009181.01	Tokoeka Trust	FDE 615 at Kohukohu Road, Kohukohu	<ul style="list-style-type: none"> Untreated effluent from a race discharged to land and was likely to discharge to water.
02/09/2015	REG.009976.01	Moss M J	FDE 616 at Mangamuka Road, Kohukohu	<ul style="list-style-type: none"> Untreated effluent from the pit discharged to water.
02/09/2015	REG.012192.01	River Round Farms Limited	FDE 621 at Mangamuka Road, Mangamuka	<ul style="list-style-type: none"> Untreated effluent from the wintering barns and feedpad discharged to land and to water.
04/09/2015	REG.021944.01	Alexander S A	FDE 675 at Sturge Road, Ōkaihau	<ul style="list-style-type: none"> Untreated effluent discharged via a stormwater bypass to water.
07/09/2015	REG.009280.01	Ngawhitu Limited	FDE 943 at Ngawhitu Road, Moerewa	<ul style="list-style-type: none"> Untreated effluent discharged via a stormwater bypass to water.
08/09/2015	REG.004324.01	Crowebar Farms Limited	FDE 967 at Pakaru Road, Kawakawa	<ul style="list-style-type: none"> Effluent from the feedpad pond discharged to land.
08/09/2015	REG.011210.01	River Lea Agri Limited	FDE 3222 at Wright Road, Pipiwai	<ul style="list-style-type: none"> Effluent from the storage pond discharged to water without RC.
09/09/2015	REG.011340.01	Bellamy P W & K L	FDE 8583 at Robert West Road, Tangiteroria	<ul style="list-style-type: none"> Water quality test results were outside RC limits.
09/09/2015	REG.011683.01	Paradise Farm Limited	FDE 8603 at Pukehuia Road, Tangiteroria	<ul style="list-style-type: none"> Water quality test results were outside RC limits.
09/09/2015	REG.013118.01	Taylor S F & L K	FDE 8613 at Pukehuia Road, Omana	<ul style="list-style-type: none"> Water quality test results were outside RC limits.

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Date	Consent Reference No.	Name	Description	Notes
09/09/2015	REG.021275.01	Woodcock D B & H J	FDE 8595 at Omana Road, Waiotira	<ul style="list-style-type: none"> Maintenance was inadequate.
09/09/2015	REG.021655.01	Drinnan S R & E R P	FDE 8606 at Pukehuia Road, Tangiteroria	<ul style="list-style-type: none"> Effluent discharged over a pond embankment to land and was likely to enter water.
10/09/2015	REG.003985.01	Bayly P A	FDE 7527 at Inksters Road, Towai	<ul style="list-style-type: none"> Untreated effluent discharged via a stormwater bypass to water.
10/09/2015	REG.011773.01	Campbell Farms Maromaku Limited	FDE 7623 at Maromaku Road, Maromaku	<ul style="list-style-type: none"> The required upgrade had not been completed (due 28 February 2012).
10/09/2015	REG.011774.01	Campbell Farms Maromaku Limited	FDE 7599 at Mason Road, Maromaku	<ul style="list-style-type: none"> Management was inadequate.
11/09/2015	REG.009580.01	Finlayson A & R Limited	FDE 3854 at Finlayson Road, Matarau	<ul style="list-style-type: none"> Silage waste discharged to land and to water.
14/09/2015	REG.009318.01	Kehoe R J & J V	FDE 7509 at Towai Road, Maromaku	<ul style="list-style-type: none"> Untreated effluent from a feedpad discharged to water.
18/09/2015	REG.010691.01	Paramu Farms Limited	FDE 7108 at Byles Road, Hikurangi	<ul style="list-style-type: none"> Water quality test results were outside RC limits.

Reasons for Significant Non-Compliance

	Aug	Sep	Total
Water quality test results outside consent limits	2	5	7
Untreated effluent discharged to water (e.g. feedpad; underpass; entry/exit race; stormwater bypass)	4	14	18
Discharge from irrigator to water	2	0	2
Excessive ponding; overland flow; discharge from irrigator into setback distances	2	1	3
Inadequate management (e.g. broken pipes, sump overflow)	0	5	5
High risk of adverse environmental effects (but no discharge to water at time of inspection)	1	0	1

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Required upgrade not completed by due date	1	1	2
Discharge to water when should be irrigating	0	0	0
Total	12	26	38

FARM DAIRY EFFLUENT DISCHARGES – NON-CONSENTED

Date	Consent Reference No.	Name	Description	Notes
26/08/2015	REG.800192.01	Pou A S J & Paki L M	FDE 802 at Puha Road, Waimā	• Untreated effluent from the sump discharged to water.
31/08/2015	REG.801385.01	Parker A J & E A	FDE 3870 at Crane Road, Kauri	• Contingency storage was inadequate.
02/09/2015	REG.800137.01	Barry J A	FDE 587 at Pawarenga Road, Broadwood	• Untreated effluent from the entry/exit race sump discharged to land and was likely to enter water.
03/09/2015	REG.800162.01	DHT Farms Limited	FDE 673 at Forest Road, Ōkaihau	• Untreated effluent discharged via a stormwater bypass to water.
04/09/2015	REG.800221.01	Smallville Farms Limited	FDE 873 at Te Pua Road, Kaikohe	• Untreated effluent from a stand-off area discharged to water.
04/09/2015	REG.801406.01	Rule N	FDE 874 Te Pua Road, Kaikohe	• Untreated effluent discharged via a stormwater bypass to water.
07/09/2015	REG.800219.01	Pukeroa Farming	FDE 861 at Ngapipito Road, Kaikohe	• Effluent from a pond discharged to water without RC.
07/09/2015	REG.800224.01	Vesey A P & S R	FDE 907 at Ludbrook Road, Pakaraka	• Effluent from a pond discharged to water without RC.
09/09/2015	REG.800988.01	Burgess L K	FDE 8582 at Pukehuia Road, Dargaville	• Untreated effluent from a feedpad discharged to land and to water.
09/09/2015	REG.801086.01	Hooper G F	FDE 8605 at Pukehuia Road, Pukehuia	• Untreated effluent from a pond discharged to land and to water.
11/09/2015	REG.800497.01	Rae Farm	FDE 3116 at Gumtown Road, Kamo	• Effluent from a pond discharged to water without RC.
11/09/2015	REG.800501.01	Colebrook R H & L E	FDE 3136 at Three Mile Bush	• Untreated effluent discharged via a stormwater bypass

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Date	Consent Reference No.	Name	Description	Notes
			Road, Matarau	to water.
11/09/2015	REG.800591.01	Drinnan Family Trust No. 2	FDE 3855 at Waipapa Road, Matarau	<ul style="list-style-type: none"> Effluent from an irrigator discharged to water. Effluent from a pond discharged to water without RC.
14/09/2015	REG.800777.01	Beulah Farm Limited	FDE 7409 at Crows Nest Road, Hukerenui	<ul style="list-style-type: none"> Effluent from a pond discharged to water without RC.
16/09/2015	REG.801417.01	G W Properties	FDE 7311 at Mine Road, Puhipuhi	<ul style="list-style-type: none"> Untreated effluent from a dairy yard discharged to land and to water.
18/09/2015	REG.804009.01.01	Whananaki Farms Limited	FDE 7104 at Whananaki North Road, Hikurangi	<ul style="list-style-type: none"> Untreated effluent from the feedpad apron discharged to land and was likely to enter water.

Reasons for Significant Non-Compliance	Aug	Sep	Total
Untreated effluent discharged to water (e.g. feedpad; underpass; entry/exit race; discharge via stormwater bypass)	2	9	11
Unauthorised discharge of treated effluent to water	1	5	6
Discharge from irrigator to water	1	1	2
Excessive ponding; overland flow; discharge from irrigator into setback distances	0	0	0
No (or inadequate) contingency storage	2	0	2
Inadequate management (e.g. broken or blocked pipes; sump overflow; irrigator/pump maintenance)	0	0	0
High risk of adverse environmental effects (but no discharge to water at time of inspection)	0	0	0
Total	6	15	21

ENVIRONMENTAL INCIDENTS

Date	Reference No.	Description	Notes	Environmental Impact
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17/09/2015	REQ.578317	Sewage discharge @ Otaika Valley Rd, Maungatapere	<ul style="list-style-type: none"> Discharge of untreated sewage to land from failing sewerage system. Investigation is continuing. 	Moderate
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SOE MONITORING – AIR, LAKES AND WATER

Classification	Date	Project	Notes
Air Quality	3/09/2015	Whāngārei Airshed – Ambient Air Monitoring	<ul style="list-style-type: none"> Continuous ambient air monitoring results for PM₁₀, sulphur dioxide and carbon monoxide at Robert Street, Whāngārei, indicated compliance with the National Environmental Standard during August 2015. Routine monthly audit calibration on particulate, sulphur dioxide and carbon monoxide monitors at Robert Street was carried out.
	4/09/2015	Kaitāia Airshed – Ambient Air Monitoring	<ul style="list-style-type: none"> Continuous ambient air monitoring results for PM₁₀ at North Road, Kaitāia, indicated compliance with the National Environmental Standard in August 2015.
	22/09/2015	Marsden Point Airshed – Ambient Air Monitoring	<ul style="list-style-type: none"> Continuous ambient air monitoring results for PM₁₀ at Bream Bay College, Ruakaka, indicated compliance with the National Environmental Standard during August 2015. Routine monthly audit calibration on particulate monitor at Bream Bay College was carried out.
Biological Monitoring	10/08/2015	Periphyton Monitoring	<ul style="list-style-type: none"> Routine benthic periphyton monitoring of RWQMN sites and priority catchments.

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Catchment Investigation	26/08/2015	Waiora Northland Water – Whāngārei Harbour Catchment Investigation	<ul style="list-style-type: none"> Routine water quality monitoring of the Hātea and Otaika Rivers and the Mangakino, Waitaua, Waiarohia, Raumanga and Puwera Streams.
	9/09/2015	Waiora Northland Water – Doubtless Bay Catchment Investigation	<ul style="list-style-type: none"> Routine water quality monitoring of the Oruru and Aurere Rivers, the Oruaiti, Kenana, Parauui, Peria and Parapara Streams and Stony Creek.
	9/09/2015	Waiora Northland Water – Waitangi Catchment Investigation	<ul style="list-style-type: none"> Routine water quality monitoring of the Waitangi and Waiaruhe Rivers and the Mania, Pekapeka, Waipapa and Watercress Streams.
Coastal – Water	13/08/2015	Kaipara Harbour Water Quality Programme	<ul style="list-style-type: none"> Eight water quality sites sampled in the Kaipara Harbour. Results pending.
	17/09/2015	Whāngārei Harbour Water Quality – Harbour Boat Run	<ul style="list-style-type: none"> Seventeen water quality sites sampled in the Whāngārei Harbour. Results pending.
	17/09/2015	Bay of Islands / Kerikeri Coastal Water Quality Programme	<ul style="list-style-type: none"> Sixteen water quality sites sampled in the Bay of Islands. Results pending.
Groundwater	10/09/2015	Groundwater Investigation – Ruāwai	<ul style="list-style-type: none"> Routine quarterly groundwater monitoring at Ruāwai.
	14/09/2015	Mangawhai – Nitrate Investigation	<ul style="list-style-type: none"> Routine monthly groundwater monitoring at Mangawhai.
	22/09/2015	Groundwater Investigation – Taipā	<ul style="list-style-type: none"> Routine quarterly groundwater monitoring at Taipā.
	23/09/2015	Groundwater Investigation – Russell	<ul style="list-style-type: none"> Routine quarterly groundwater monitoring at Russell.
	24/09/2015	Maungakarama – Nitrate Investigation	<ul style="list-style-type: none"> Routine monthly groundwater monitoring at Maungakarama.
	24/09/2015	Whatitiri – Nitrate Investigation	<ul style="list-style-type: none"> Routine monthly groundwater monitoring at Whatitiri.
	24/09/2015	Groundwater Quality Sampling – State of Environment	<ul style="list-style-type: none"> Routine quarterly groundwater monitoring under the SOE groundwater sampling programme.
	25/09/2015	National Groundwater Monitoring Project – IGNS	<ul style="list-style-type: none"> Routine quarterly groundwater monitoring under NGMP.
Lake	28/07/2015	LWQMN – Lake Ōmāpere	<ul style="list-style-type: none"> Routine water quality monitoring of Lake Ōmāpere at its outlet.

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Water Quality Monitoring Network (LWQMN)	6/08/2015	LWQMN – Poutō Lakes	<ul style="list-style-type: none"> Routine water quality monitoring of Lakes Mokeno, Karaka, Wainui, Kahuparere, Kanono, Rotokawau, Humuhumu, Swan and Rototuna.
River Water Quality Monitoring Network (RWQMN)	15/07/2015	RWQMN – Southern	<ul style="list-style-type: none"> Routine monthly water quality monitoring of the Ruakaka, Hakaru, Manganui, Waipao, Waiarohia and Otaika Rivers, including two sites on the Mangere River.
	17/06/2015	RWQMN – Northern	<ul style="list-style-type: none"> Routine monthly water quality monitoring of the Mangamuka, Awanui, Oruru and Kaeo Rivers.
	19/08/2015	RWQMN – Eastern	<ul style="list-style-type: none"> Routine monthly water quality monitoring of the Waitangi, Waipapa, Kerikeri, Waiharakeke, Waiotu, Ngunguru, Hātea and Whakapara Rivers and the Mangahuru Stream. River levels at all sites were high due to previous heavy rainfall.
	16/09/2015	RWQMN – Western	<ul style="list-style-type: none"> Routine monthly water quality monitoring of the Kaihu, Waipoua, Waimāmakū, Punakitere, Utakura, Mangakahia and Opouteke Rivers.

ISSUE: Community wastewater treatment plant discharges – current compliance status (updated)

ID: A784964

To: Environmental Management Committee, 27 October 2015

From: Tess Dacre, Compliance Monitoring Manager

Date: 2 October 2015

Report Type:	<input checked="" type="checkbox"/> Normal operations	<input checked="" type="checkbox"/> Information	<input type="checkbox"/> Decision
Purpose:	<input type="checkbox"/> Infrastructure	<input type="checkbox"/> Public service	<input checked="" type="checkbox"/> Regulatory function
	<input checked="" type="checkbox"/> Legislative function	<input checked="" type="checkbox"/> Annual\Long Term Plan	<input type="checkbox"/> Other
Significance:	<input type="checkbox"/> Triggered	<input checked="" type="checkbox"/> Not Triggered	

Executive Summary:

The purpose of this report is to give an update on the resource consent compliance status of Northland's 29 community wastewater treatment plants and the actions being taken to remedy any non-compliance. Good progress is being made by all three district councils in bringing their treatment plants into consistent compliance.

Legal compliance and significance assessment:

The activities detailed in this report are provided for in the council's 2015-2025 Long Term Plan, and as such are in accordance with the council's decision-making process and Sections 76-82 of the Local Government Act 2002.

In relation to section 79 of the Local Government Act 2002, this issue is considered to be of low significance under Council policy because the report does not seek a decision other than that information be received.

Recommendation(s):

That the report Community wastewater treatment plant discharges – current compliance status (updated) from Tess Dacre, Compliance Monitoring Manager, dated 2 October 2015 be received.

Report

This report and the attached table provide a status update on the 29 community wastewater treatment plants (WWTP) operated by the region's three territorial authorities: Far North, Kaipara and Whangarei District Councils (FNDC, KDC and WDC). FNDC has the most with 15 different WWTP across its district. WDC has nine and KDC has five. Also included in the table is the Hatea pump station and storage tank operated by WDC (this is also covered by a resource consent).

The majority of Northland's community wastewater treatment plants have up-to-date consents and routinely meet their required discharge and water quality standards.

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Good progress continues to be made by all three councils to improve wastewater treatment and bring all plants into consistent compliance.

FNDC have the Taipa and Kerikeri wastewater treatment plant replacement consents in process.

NRC staff are now regularly meeting with staff from all three districts to discuss any compliance issues with their respective plants. Reporting by all three districts is now being undertaken as per the consent requirements.

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Location/Consent Status	Plant Description	Status & Issues	Update as at September 2015
Ahipara (FNDC) Consent issued 2013, expiry 2033.	<ul style="list-style-type: none"> • Oxidation pond, surface flow wetland, overland flow to drain. • Discharges to a tributary of Wairoa Stream. 	<ul style="list-style-type: none"> • No major operational issues. • Resource consent application lodged with NRC to allow for desludging. • Desludging work scheduled for early summer 2014. 	<ul style="list-style-type: none"> • Breach of bacteria median reported in September. • Desludging of the wetland is overdue. • Leachate volumes from the Ahipara landfill are exceeding the consented volume.
Hihi (FNDC) Consent issued 2011, expiry 2022.	<ul style="list-style-type: none"> • Extended aeration treatment system with flow equalisation and UV disinfection followed by surface flow wetland. • Discharges to the Hihi Stream. 	<ul style="list-style-type: none"> • Stormwater infiltration was believed to be an issue. • Treatment quality now fully compliant with RC requirements. • A recent analysis carried out by FNDC staff suggests that stormwater infiltration may no longer be a significant issue at the plant. FNDC will continue to analyse flows to verify the situation. 	<ul style="list-style-type: none"> • FNDC planning to upgrade the plant with a new biological stage and an inlet screen. Project to be complete by early 2017.
Kaeo (FNDC) Consent issued 2007, expiry 2022. Changed consent issued October 2011.	<ul style="list-style-type: none"> • Settlement and oxidation ponds • Packed bed reactor incorporating vermiculture. • Wetland. • Discharges to the Kaeo River. 	<ul style="list-style-type: none"> • Consent requires 4-log reduction of viral indicators to protect downstream oyster farms. • The UV filter from Awanui WWTP has been installed at Kaeo . • Breach of bacteriophage 4-log limit. The reduction was 3-log. FNDC believe that this is more an issue with the consent condition as opposed to the treatment. • NRC agree that this is essentially a technical breach. 	<ul style="list-style-type: none"> • Nothing new to report.
Kaikohe (FNDC) Consent issued 2005, expiry 2021. Changed consent issued 19 April 2011.	<ul style="list-style-type: none"> • Anaerobic pond, large facultative pond, three surface flow wetlands. • Discharges to a tributary of the Wairoro stream. 	<ul style="list-style-type: none"> • The Kaikohe ponds often suffer from blue green algae blooms in summer. • Problems with compliance during low flows (ammoniacal nitrogen exceeds consent limit). • FNDC commissioned the Cawthron Institute to undertake a detailed assessment on the effects of the intermittent ammonia exceedances on stream life. • The report was completed in September 2014 and suggests that downstream habitat is being affected by the wastewater treatment plant discharge but these affects were due to eutrophication as opposed to ammonia toxicity. • In other words, complying with the ammonia standard won't necessarily improve conditions downstream of the discharge. • FNDC will be working with NRC staff to work towards developing an appropriate means of managing the effects of the discharge. 	<ul style="list-style-type: none"> • Nothing new to report.
Kaitiāia (FNDC) Change consent issued 2015, expiry	<ul style="list-style-type: none"> • Two ponds plus floating wetland cells. • Discharges to the Awanui 	<ul style="list-style-type: none"> • Main issue is blue green algae and discharge during summer. • No exceedances of the consent limits for algae occurred during the last two summers. 	<ul style="list-style-type: none"> • FNDC will report on the reticulation overflow studies in October.

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Location/Consent Status	Plant Description	Status & Issues	Update as at September 2015
2021.	River.	<ul style="list-style-type: none"> Significant issues with the Kaitia reticulation network have been raised. FNDC are currently assessing options for remediation. NRC and FNDC are undertaking additional monitoring to establish the effects of the reticulation overflows on the environment. Overflow monitoring equipment has been installed at various sites, including Bank Street and Pukepoto Road Bridge. These investigations will help determine what works will be required to remedy the situation. Change consent issued removing requirement for a disinfection system and amended conditions for bacteriophage. 	
Kawakawa (FNDC) Consent issued 2012, expiry 2036.	<ul style="list-style-type: none"> Aeration tank, a secondary clarifier, a disc filter, UV treatment and then to constructed wetlands. Discharges to Kawakawa River. 	<ul style="list-style-type: none"> System usually working well since upgrade. 	<ul style="list-style-type: none"> Nothing new to report.
Kerikeri (FNDC) Consent issued 2005, expiry 2015.	<ul style="list-style-type: none"> Aerated treatment system (solids separation, RBCs, and clarifiers). System has UV unit (operates poorly). Discharges to the Waitangi forest natural wetland (a tributary of the Kerikeri Inlet). 	<ul style="list-style-type: none"> Historically, the system has had significant odour problems. Ongoing issues with performance of disinfection unit due to poor quality effluent. Community liaison meetings outstanding, however on-going consultation is being carried out with adjoining land owners and tangata whenua. Breach of bacteria mean and bacteriophage log reduction are ongoing problems. Some initial work has been completed to renovate the bark filter to improve odour treatment at the site. A new screen has also been installed, which will improve overall treatment quality. Operators are doing all they can to operate within RC limits, however plant is past its use-by-date. 	<ul style="list-style-type: none"> FNDC plan to construct a new Kerikeri WWTP at a new site outside of the township. Consent process for the discharge and designation due to re-commence in November 2015.
Kohukohu (FNDC) Consent issued 2002, expiry 2016.	<ul style="list-style-type: none"> Septic tanks followed by oxidation pond and surface flow wetland. Discharges to Hokianga Hbr. 	<ul style="list-style-type: none"> Consistently complies with water quality conditions of consent. No outstanding issues. 	<ul style="list-style-type: none"> Nothing new to report.
Opononi and Omāpere (FNDC) Consent issued	<ul style="list-style-type: none"> Primary screen, aerated pond, facultative pond, surface flow wetland. 	<ul style="list-style-type: none"> Stormwater infiltration is an issue. During significant rainfall events the discharge will at times occur outside of the tidal flow condition to prevent overtopping 	<ul style="list-style-type: none"> Breach of the median bacteriological limit reported in September.

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Location/Consent Status	Plant Description	Status & Issues	Update as at September 2015
2009, expiry 2019.	<ul style="list-style-type: none"> Discharges to Hokianga Harbour (on outgoing tide). 	<ul style="list-style-type: none"> of the wetland. FNDC intends to carry out a district wide investigation of inflow & infiltration and will include Opononi as part of a prioritised programme. Improvements in hydraulic retention and discharge pumping have been made to alleviate necessity to discharge outside of consented timeframes. The wetlands were desludged and replanted in summer 2014/15. 	
Paihia (FNDC) Consent issued 2014, expiry 2034.	<ul style="list-style-type: none"> Two pond system. Discharges to the Waitangi forest natural wetland (a tributary of the Kerikeri Inlet). 	<ul style="list-style-type: none"> Current system in significant non-compliance with consent conditions (ammoniacal nitrogen frequently exceeds consent limits) and in need of upgrade regardless of progress on new system. The April 2015 deadline for upgrading the system has not been met. 	<ul style="list-style-type: none"> A new SAF plant will be added to the Paihia system.
Rangiputa (FNDC) Consent issued 2008, expiry 2032.	<ul style="list-style-type: none"> Oxidation ponds. Discharges to ground via the base of a third pond. 	<ul style="list-style-type: none"> No current performance issues with this treatment system. 	<ul style="list-style-type: none"> Nothing new to report.
Rāwene (FNDC) consent issued May 2013, expiry 2023.	<ul style="list-style-type: none"> Anaerobic pond, facultative pond & surface flow wetland. Discharges to Omanaia River. 	<ul style="list-style-type: none"> No current performance issues with this treatment system. 	<ul style="list-style-type: none"> Nothing new to report.
Russell (FNDC) Consent issued September 2013, expiry 2024.	<ul style="list-style-type: none"> Aerated treatment system, surface flow wetland, filtration and UV disinfection. Discharges to deep bores. 	<ul style="list-style-type: none"> No significant issues at this point. Usually consistently complies with water quality conditions of consent. 	<ul style="list-style-type: none"> Nothing new to report.
Taipā (East Coast Bays) (FNDC) Consent expired 2008. Replacement consent in process – on hold to allow assessment of land disposal option. Significant opposition to WWTP operation.	<ul style="list-style-type: none"> Facultative pond and aerated pond followed by surface flow wetland (4 cells). Discharges to a tributary of the Parapara Stream. 	<ul style="list-style-type: none"> Problems with blue green algae in the discharge at times. High ammonia and suspended solids from the marsh discharge at times. Application is still in process. FNDC commissioned an ecological assessment of the receiving environment to gain a better understanding of the effects of the current discharge. This reports suggests that fixing the ammonia issues from the plant may not necessarily improve the situation, given other factors in the wider catchment. 	<ul style="list-style-type: none"> Breach of ammonia limit downstream reported in September.
Whatuwhiwhi (FNDC) Consent issued 2007, expiry 2025.	<ul style="list-style-type: none"> Two aerated ponds equipped with biological growth media. Discharges to natural wetland which extends down to Karikari Bay. 	<ul style="list-style-type: none"> Now has a UV plant. 	<ul style="list-style-type: none"> Breach of the median TSS limit reported in September.

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Location/Consent Status	Plant Description	Status & Issues	Update as at September 2015
Dargaville (KDC) Consent issued 2007, expiry 2022.	<ul style="list-style-type: none"> Facultative pond and wetland/maturation pond. Discharges to the Northern Wairoa River. 	<ul style="list-style-type: none"> CCTV investigations to identify areas of inflow and infiltration to the wastewater reticulation network have been undertaken Consistently complies with water quality conditions of consent. Wastewater reticulation repairs are ongoing to further reduce inflow and infiltration to the network. 	<ul style="list-style-type: none"> Nothing new to report.
Kaiwaka (KDC) Consent issued 2010, expiry 2022.	<ul style="list-style-type: none"> Aerated pond and constructed wetland. Discharge to Pukekaroro Stream 	<ul style="list-style-type: none"> Issues with complying with water quality conditions of consent. De-sludging of the oxidation pond has been completed. Hoping to see improvements in water quality now that the pond has been renovated. KDC has installed a Magflow flow meter at the discharge point. KDC investigating operation of an aerator. 	<ul style="list-style-type: none"> Nothing new to report.
Maungaturoto (KDC) Consent issued 2008, expiry 2032.	<ul style="list-style-type: none"> Aerated pond, membrane filtration plant, storage pond, discharge to rock filter. Discharges to the Wairau River. 	<ul style="list-style-type: none"> No current issues with plant operation. KDC working on setting up system to send data in appropriate excel format and on time. Discharge at extreme wet weather rate during last storm event to prevent overflow of untreated WW from oxidation pond. 	<ul style="list-style-type: none"> Nothing new to report.
Mangawhai – Ecocare (KDC) Consent issued 2007, expiry 2042.	<ul style="list-style-type: none"> Screening, CASS tanks, chlorination and then pumped to storage dam. Irrigated to farmland. 	<ul style="list-style-type: none"> Consistently complies with water quality conditions of RC. KDC are investigating additional wastewater disposal options. 	<ul style="list-style-type: none"> Nothing new to report.
Te Kopuru (KDC) Consent issued 2010, expiry 2044.	<ul style="list-style-type: none"> Oxidation ponds and constructed wetland. Discharges to Northern Wairoa River. 	<ul style="list-style-type: none"> Historic problems with Ecoli and TSS have improved since the oxidation pond was desludged. A new meter has been installed to measure discharge volumes. Ongoing high ammoniacal nitrogen results. 	<ul style="list-style-type: none"> KDC have engaged the services of Harrison Grierson to suggest improvements to the high ammonia.
Hātea Pump Station & Storage Tank (WDC) Consent issued July 2013.	<ul style="list-style-type: none"> Storage tank, UV unit and chemical treatment. 	<ul style="list-style-type: none"> Plant commissioned in July 2013 and has generally performed well. 	<ul style="list-style-type: none"> Nothing new to report.
Hikurangi (WDC) Consent issued 2007 (re-issued 2010), expiry 2025.	<ul style="list-style-type: none"> Settling pond, aerated pond, wetland and membrane filter for disinfection and floating wetlands. Discharges to Mangawhero stream. 	<ul style="list-style-type: none"> Plant has been operating well. 	<ul style="list-style-type: none"> Membrane plant has recently been overhauled and new membranes put in, with a marked increase in reliability. The floating wetlands are performing well with a notable decrease in solids being passed to membrane plant.
Ngunguru (WDC) Consent issued 2010, expiry 2035.	<ul style="list-style-type: none"> Aerated pond, settling pond, constructed wetland and UV unit. 	<ul style="list-style-type: none"> Effluent is compliant with consent effluent parameters, but high ammonia and low flow in the receiving waters means it is having a detrimental effect. 	<ul style="list-style-type: none"> Investigation is ongoing to further reduce the ammonia concentration in the effluent below the consent parameters.

Attachment to Item 5

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Location/Consent Status	Plant Description	Status & Issues	Update as at September 2015
	<ul style="list-style-type: none"> Discharges to tributary of the Waitoi creek. 	<ul style="list-style-type: none"> Onsite investigations underway to try and reduce effluent ammonia 	
Oakura (WDC) Consent issued 2006, expiry 2025.	<ul style="list-style-type: none"> Screening, sedimentation tanks, biological contactor unit, disc filter and UV unit. Discharges to forest land via dripper lines. 	<ul style="list-style-type: none"> No issues with operation of plant. A new HMI has been installed on the PLC allowing better control and visibility of the plant operation programme. 	<ul style="list-style-type: none"> A soil analysis of the effluent dispersal area is being arranged as required by the RC.
Portland (WDC) Consent issued 2004, expiry 2024.	<ul style="list-style-type: none"> Oxidation pond and constructed wetland. Discharges to Tokitoki Creek. 	<ul style="list-style-type: none"> Consistently complies with water quality conditions of consent. 	<ul style="list-style-type: none"> Nothing new to report.
Ruakaka (WDC) Consent issued 2008, expires 2018.	<ul style="list-style-type: none"> Aerated pond and constructed wetlands. Discharges to Bream Bay sand dunes. 	<ul style="list-style-type: none"> Plant is operating well and consistently complies with water quality conditions of consent. 	<ul style="list-style-type: none"> Nothing new to report.
Tutukaka (WDC) Consent issued 2004, expiry 2024	<ul style="list-style-type: none"> Screening, primary treatment, denitrification recirculation tanks, sand filters, UV unit and constructed wetland. Discharges to a tributary of Tutukaka Harbour. 	<ul style="list-style-type: none"> Plant is operating well and consistently complies with water quality conditions of consent. 	<ul style="list-style-type: none"> A modification has been made to the UV system onsite, allowing a sample to be taken, as opposed to having to wait for it to run in automatic to obtain a sample.
Waiōtira (WDC) Consent issued 2008, expiry 2030.	<ul style="list-style-type: none"> Septic tank and constructed wetland. Discharges to Waiōtira Stream. 	<ul style="list-style-type: none"> Consistently complies with water quality conditions of consent. 	<ul style="list-style-type: none"> Nothing new to report.
Waipū (WDC) Consent issued 2007, expiry 2015.	<ul style="list-style-type: none"> Aerated pond, constructed wetland with discharge to rapid in-fill basins. Discharges to the Bream Bay coast via subsurface flow. 	<ul style="list-style-type: none"> Consistently complies with conditions of consent. De-sludging of the oxidation pond has been done, plus the installation of a new screen and inlet flow meter. 	<ul style="list-style-type: none"> The rapid infiltration basins have had the top 300mm renewed to reduce ponding. Ongoing works are planned to upgrade the surface wetlands to floating wetlands. A new application for RC for conversion of an old infiltration basin to an onsite disposal area for waste arising from the wetlands upgrade and future infiltration basin maintenance has been received.
Whāngārei Main WWTP (WDC) Consent issued 2004, expiry 2022.	<ul style="list-style-type: none"> Screening, primary clarifiers, 1st and 2nd stage trickling filters, activated sludge basin and clarifiers, effluent filter, 	<ul style="list-style-type: none"> Consistently complies with water quality conditions of consent. 	<ul style="list-style-type: none"> The variation to the RC for TSS limit was issued in July 2015. An assessment on the feasibility for the installation of a bio-gas engine on the

Attachment to Item 5

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Location/Consent Status	Plant Description	Status & Issues	Update as at September 2015
Change to consent applied for – currently in process.	UV unit and normal to high flows go through wetlands. • Discharges to Limeburners Creek.		digestion plant has been undertaken, indicating that up to a 70kWh of electricity could be generated. A tender for a bio-gas engine is anticipated to be issued within next two months.

ISSUE: **Recreational Swimming Water Quality Programme**

ID: A779042

To: Environmental Management Committee, 27 October 2015

From: Colin Dall, Group Manager Regulatory Services and Pania Te Whaiti,
Environmental Monitoring Officer - SOE

Date: 24 September 2015

Report Type:	<input checked="" type="checkbox"/>	Normal operations	<input checked="" type="checkbox"/>	Information	<input type="checkbox"/>	Decision
Purpose:	<input type="checkbox"/>	Infrastructure	<input checked="" type="checkbox"/>	Public service	<input type="checkbox"/>	Regulatory function
	<input type="checkbox"/>	Legislative function	<input checked="" type="checkbox"/>	Annual\Long Term Plan	<input type="checkbox"/>	Other
Significance:	<input type="checkbox"/>	High	<input type="checkbox"/>	Moderate	<input checked="" type="checkbox"/>	Low

Executive Summary:

The report summarises the results of the 2014/15 recreational swimming water quality programme (RSWQP) and outlines the proposed programme for 2015/16.

Legal Compliance and Significant Assessment:

The activities detailed in this report are part of the council's day to day operations, which are provided for in the Council's 2015/25 Long Term Plan and are therefore in accordance with the Council's decision making process and sections 76-82 of the Local Government Act 2002.

The programme also contributes to the council's statutory obligations under section 35 of the Resource Management Act 1991 for state of the environment and plan effectiveness monitoring and reporting.

Recommendations:

1. That the report "Recreational Swimming Water Quality Programme", prepared by Colin Dall, Group Manager Regulatory Services and Pania Te Whaiti, Environmental Monitoring Officer, dated 24 September 2015, be received.
 2. That the programme for 2015/16 as outlined in the report be supported.
-

Programme

The RSWQP is a joint project, administered by the Northland Regional Council (NRC), in partnership with the Northland District Health Board (DHB), the Far North District Council (FNDC), Whangarei District Council (WDC) and Kaipara District Council (KDC). The aim of the programme is to provide information on bacteriological water quality at popular swimming sites in Northland to allow the public to make informed decisions about where to swim. When elevated levels of faecal indicator bacteria are identified the NRC and the relevant District Council work to identify the source of contamination, and where possible, improve the water quality at the affected sites.

Summary of Results for 2014/15

The Ministry for the Environment (MfE) and Ministry of Health (MoH) guidelines for freshwater and coastal swimming water quality are presented in Table 2. *Escherichia coli* (*E. coli*) and enterococci (*Ent.*) bacteria are quantified for freshwater and coastal sites, respectively.

Table 1: MfE/MoH Guidelines for Coastal and Freshwater Swimming Water Quality

	Freshwater	Coastal
Acceptable level (suitable for swimming)	<i>E. coli</i> ≤260/100mL	<i>Ent.</i> ≤140/100mL
Alert level (potentially unsuitable for swimming)	260/100mL ≤ <i>E. Coli</i> ≤550/100mL	140/100mL ≤ <i>Ent.</i> ≤280/100mL
Action level (unsuitable for swimming)	<i>E. coli</i> >550/100mL	<i>Ent.</i> >280/100mL

From November 2014 to February/March 2015, a total of 13 freshwater and 47 coastal sites were monitored including a core set of 20 permanent sites. The results for the 2014/15 season are summarised below:

- 31 coastal sites met the suitable for swimming criteria 100 percent of the time. A further 13 were suitable for swimming on all but one occasion and the remaining three sites were suitable for swimming on all but two sampling occasions. Overall, 590 out of 609 (96.9%) coastal samples met the guideline value.
- Four freshwater sites met the suitable for swimming criteria 100 percent of the time, six sites were suitable for swimming on all but one sampling occasions, and two were suitable for swimming on all but two sampling occasions. The remaining site was classified as unsuitable for swimming on five sampling occasions. Overall, 146 out of 161 (90.7%) freshwater samples met the guideline value.
- Appendix 1 shows the 2014/15 end of season grades for each site, where the sites are categorised according to the percentage of samples that fall below the guideline value.

Update on Pathogen Testing at Whangarei Falls

Pathogen sampling was undertaken at the Whangarei Falls site on three occasions – June 2014, January and August 2015, to investigate the relationship between the concentration of faecal indicator bacteria (FIB) and the presence of pathogens in water. Results from the sampling events are summarised in Table 2.

Table 2: FIB and Pathogen Testing at Whangarei Falls – ND: Not detected.

Date Sampled	11/06/14	20/01/15	06/08/15
Rainfall (accum.72hrs) (mm)	14.2	2.4	41.4
Bacteria (MPN/100mL)			
<i>Total coliforms</i>	>24,000	9,200	>24,000
<i>Escherichia coli</i>	880	230	9200
<i>Enterococci</i>	260	ND	3700
<i>Salmonella spp.</i>	ND	ND	ND
<i>Campylobacter spp.</i>	12	ND	110
<i>Escherichia coli O157</i>	ND	ND	ND
Protozoa (/10L)			
<i>Cryptosporidium parvum</i> oocysts	ND	ND	ND
<i>Giardia lamblia</i> cysts	1	ND	ND
Viruses (presence/absence)			
Enteric viruses including: Norovirus, Enterovirus, Adenovirus, Hepatitis A & E viruses, Rotavirus	ND	ND	ND

Some pathogens were detected in June 2014 and August 2015 when FIB levels exceeded the MfE/MoH swimming water quality guideline of 550 *E. coli*/100mL, whereas no pathogens were detected in January 2015 when FIB levels were below guidelines. Of the pathogens tested for, only campylobacter species and one *Giardia lamblia* cyst were detected. No salmonella species, *Escherichia coli* O157 (per 100 mL sample – 1 *E. coli* O157 was detected in a 1 L sample collected on 11/06/14), *Cryptosporidium parvum* oocysts and enteric viruses were detected.

Campylobacter can cause gastroenteric illness in humans. They are found in the gut and faeces of warm-blooded animals, including humans, ruminants and birds. The testing undertaken did not differentiate what the likely source of the *Campylobacter* detected was.

Guidelines

The committee has previously been advised that the appropriateness of the guidelines used in New Zealand to assess the suitability of marine and freshwater areas for swimming has been challenged by various parties, including regional councils.

In the past, the committee has questioned the merits of sampling sites during wet periods. Partly in response to this, the council has commissioned some work to look at the correlation between river flows and *E. coli* in Northland. Some of the preliminary findings of this work are provided in Appendix 2. It is emphasised that those findings have not been peer reviewed yet and, therefore, are subject to change.

Proposed Recreational Swimming Water Quality Programme for 2015/16

The following programme will be subject to discussion at the pre-season stakeholder meeting in November 2015.

Site Selection and Sampling Regime

It is proposed that the number of sites monitored is not increased in 2015/16 and that all sites will be monitored weekly from 23 November 2015 until 23 February 2016.

Results will be sent to the Northland District Health Board and District Councils (which, if required, erect warning signs and undertake follow-up sampling). Results will also be

displayed on the national environmental reporting website – LAWA (Land, Air, Water Aotearoa).

The council has committed to sampling at a minimum of 50 swimming sites from late November to late February in its Long Term Plan 2015-2025. In 2014/15, a total of 60 sites were monitored. In reviewing the monitoring programme, it is noted that there are some coastal sites that have been sampled on numerous occasions and have always met the swimming guidelines. Therefore, there is scope to either:

- Stop monitoring some sites and replace them with new sites; or
- Stop monitoring some sites and free up some resources for other SOE monitoring work.

This will be discussed with the Northland District Health Board and District Councils at the pre-season stakeholder meeting in November 2015 and may result in some changes to the sites monitored.

Site Investigations

Investigative work includes the use of microbial source tracking (MST), catchment profiling and undertaking sanitary surveys. Catchment profiling may be carried out if the first MST result returns a contamination source from ruminants or humans. Sanitary surveys are carried out by the relevant District Council at sites where the MST returns a positive human result, or where specific sewerage/septic tank systems are suspected to be faulty.

Sites exceeding the Ministry for the Environment and Ministry of Health (MfE and MoH) swimming water quality guidelines – excluding exceedance related to rainfall runoff – are included in the investigation programme to determine the source of contamination, and if possible, rectify the problem. A brief summary of the results from faecal source tracking to date is provided in Appendix 3.

The sites which will be investigated in the 2015/16 swimming programme are presented in Table 3.

Table 3: Site Investigation Schedule for 2015/16 – IR: If Required, n/a: Not Applicable

Site Name	Weekly Monitoring	Faecal Source Analysis	Catchment Profiling	Sanitary Survey
Matapouri Northern Bridge	✓	✓	Done	n/a
Matapouri Southern Bridge	✓	✓	Done	n/a
Paihia at Waitangi Bridge	✓	✓	IR	n/a
Raumanga at Raumanga Valley Park	✓	✓	IR	<i>In progress</i>
Ruakaka below Motor Camp	✓	✓	IR	IR
Victoria at DOC Reserve Crossing	✓	✓	Done	Done
Tokerau Beach at Melissa Road	✓	✓	IR	IR
Kerikeri at Rainbow Falls	✓	✓	IR	IR
Hatea at Whangarei Falls	✓	✓	IR	IR

Appendix 1: End of Season Swimming Grades for 2014/15



Appendix 2: Preliminary Work on Correlation Between River Flows and *E. coli*

The following findings are based on a preliminary analysis of paired flow and *E. coli* data at river monitoring sites that have a sufficient amount of such data to undertake a correlation analysis:

The work is only a preliminary inspection of the strength of association between log-normalised flow and log-normalised *E.coli* concentrations at Northland's river water quality monitoring stations (performed by Tom Stephens, DairyNZ). That is, testing whether any dominant positive or negative relationships exist in how concentrations of *E.coli* vary with flow, from which the respective pathway could arguably be diffuse or point in dominance, it doesn't explicitly examine the pathway and source of *E.coli* load at any station for which you would need higher resolution data including of place of origin (e.g., faecal source biomarkers).

Caveats that apply, include:

1. Only examines stations (monitoring sites) with 12 or more monthly observations of paired flow AND *E.coli* concentration (i.e., exclude sites with little data on which to base relationship – ranging from 36-380 months of data across 25 stations with a median of 101 months of paired observations per station).
2. Censored (checked) all sites for > or < detection limit (replacing *E.coli* non-detects with $\frac{1}{2}$ the lowest detectable concentration over the time-series; or the highest detectable concentration plus one over the time-series).
3. Normalised all subsequent flow ($\ln(\text{flow})$) and *E.coli* concentrations ($\ln(E.coli)$) – assumed normality as didn't go so far as to test explicitly, but a fair assumption for preliminary work.
4. Calculated Pearson correlation coefficients by station for all flows and then after partitioning the records into flow-bins, resulting in correlation coefficients for:
 - All flows
 - Flows less than three times the median (e.g., less than typical definition of a 'fresh' and as per MoH/MfE [2003] bathing guidance to include only flows less than three times the median).
 - Flows less than the median.
 - Flows greater than the median
5. Grading under NOF used an either or principle – if the 3-yr running 95th% of monthly observations met the criterion for "A" or "B" band the site was graded as such, but if it failed then the 1-yr median of any year was used to assign a "C" or "D" banding to that year. Note, that I incorrectly have used the Excel 95th% rather than the Hazen 95th% as per Grahame McBride's recommendations for monitoring bathing sites under the NOF (but that the limited numbers of sites recording at best a "B" band, in turn limits the effect this error would have and has no impact on the association tests above).

Notable findings include:

1. If bathing values are best defined by flows of less than three times the median ($<3 \times \text{median}$), there are only 4 stations where diffuse sources appear to dominate changes in *E.coli* concentrations (e.g., where Pearson's r is positive and ≥ 0.4). These are Kaihu River@Gorge, Mangahuru Stream@Apotu & also @weir and Waitangi River@Wakelins. The Waipapa River @Forest ($r=0.39$) observed a

- moderately strong positive relationship suggesting diffuse origins of *E.coli* loading might still be important to changes in bathing risk during flows $< 3 \times$ median.
2. 1 station observes a strong negative relationships of *E.coli* with flow during bathing flows (Kaeo River @ D/S $r = -0.58$) and two more are weakly-to-moderately negative (Otaika Stream @ Otaika Valley Rd $r = -0.32$; Waipao Stream @ Draffing $r = -0.22$). Hence, point source discharges tend to be dominant drivers of bathing risk in bathing flows at no more than 1 station and arguably could be of some importance to changes in bathing risk at only 3 stations.
 3. Hence, at the vast majority of NRWQMN stations (18 of 25) there is no clear pattern of *E.coli* concentration with flow, even less so during bathing flows (i.e., even weaker correlations in flow-partitioned bins of lower discharge).
 4. Possible hypotheses to explain this include complex contributions from both point and diffuse sources (counter-acting each's influence); loading by point or diffuse sources, more or less independently of flow (i.e., if septic tanks were contributing, that they would more so, during times of the year that had little to do with seasonality or a clearly defined low-flow period); and/or changes in the dominant pathway over the record length (e.g., if point source dominated early *E.coli* concentrations but diffuse later, the combined effect over the whole record would be a weak or moderate correlation with both – remember the results above are from analysis of the entire length of flow and *E.coli* records at a station).

The following table gives a summary of the analytical results for 5 Northland river sites (stations):

Station name	NOF status (bathing flows)		Flow- <i>E.coli</i> correlation	
	2013	2014	All flows	Bathing flows
Victoria River @ Thompsons Bridge	C	B	0.40	-0.07
Ruakaka River @ Flyger Road Bridge	D	C	0.36	0.17
Kaeo River @ Dip Road Bridge	C	C	-0.23	-0.58
Oruru River @ Oruru Road	C	C	0.62	0.16
Kaihu River @ Gorge	C	C	0.65	0.48

The above examples give a good mix of the “C” and “B” graded river sites as well as weak to strong correlations between flow and *E. coli* concentrations in both positive and negative directions. The rating curves for those 5 river sites are shown in Attachment A:

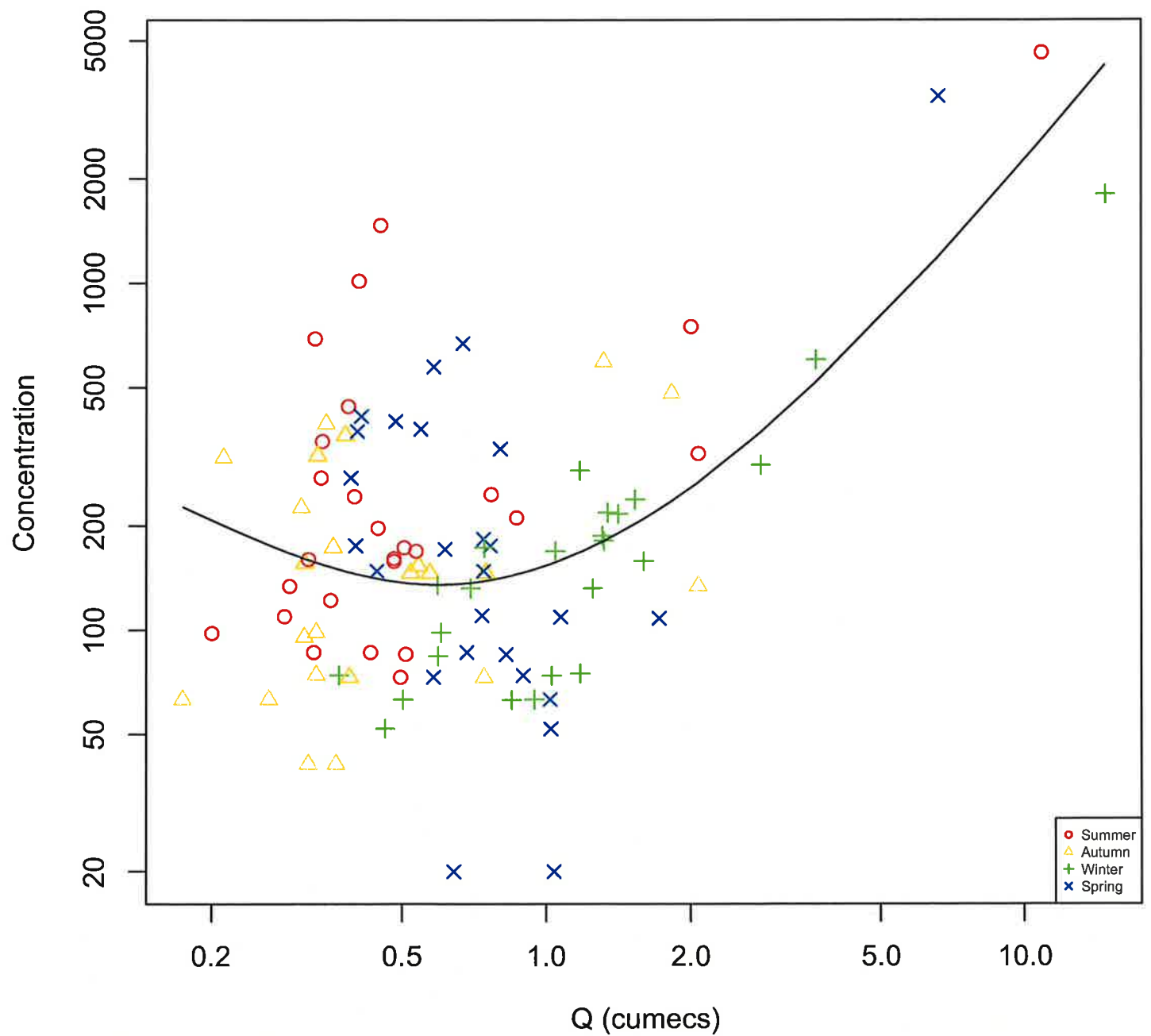
Appendix 3: Faecal Source Tracking Investigations

A total of 26 sites have been studied as part of a council initiative to investigate water quality issues at sites not meeting the MfE/MoH guidelines. Microbial source tracking (MST) to isolate the source(s) of contamination at these sites has shown that:

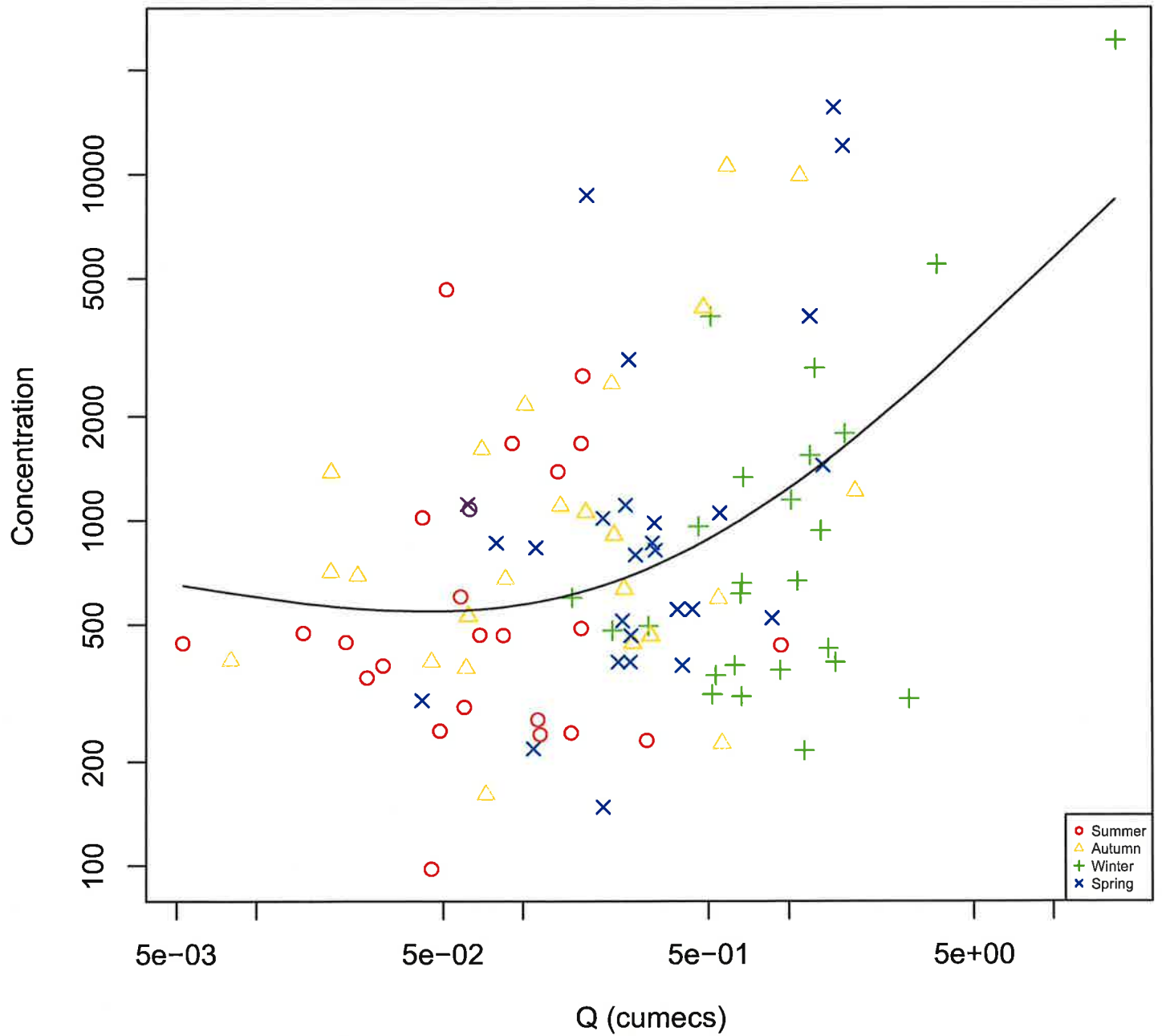
- 23 sites were contaminated by wildfowl (ducks and/or gulls)
- 18 sites were contaminated by ruminant faecal matter
- Five sites implicate human contamination

Where the source of contamination is from natural sources, i.e. avian (birds), little can be done to rectify the problem. Where the source of contamination is related to humans or human activities (i.e. human, herbivore or dogs), council staff work with landowners to remedy the situation such as developing farm water quality improvement plans.

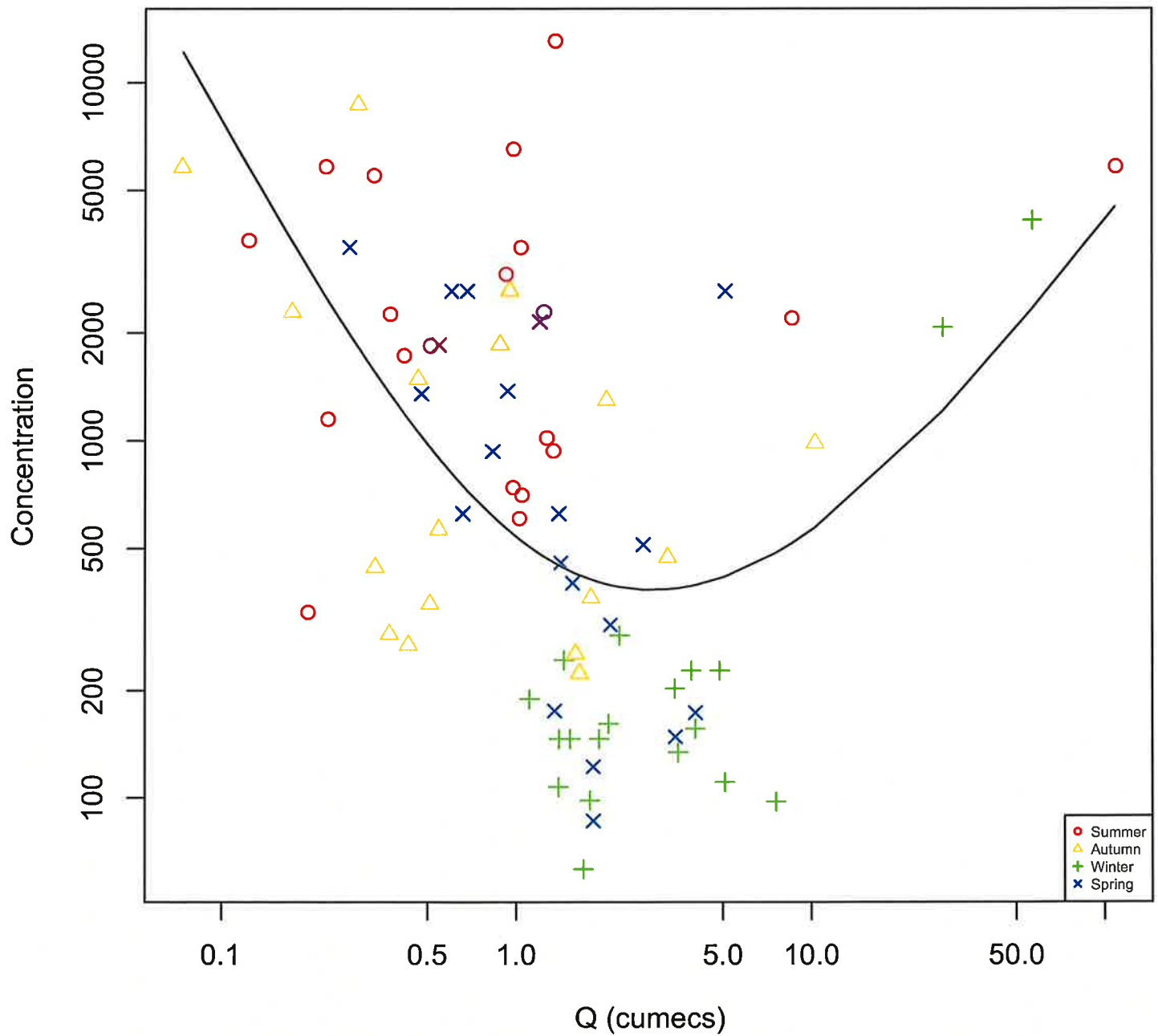
105532 : Victoria River at Thompsons Bridge



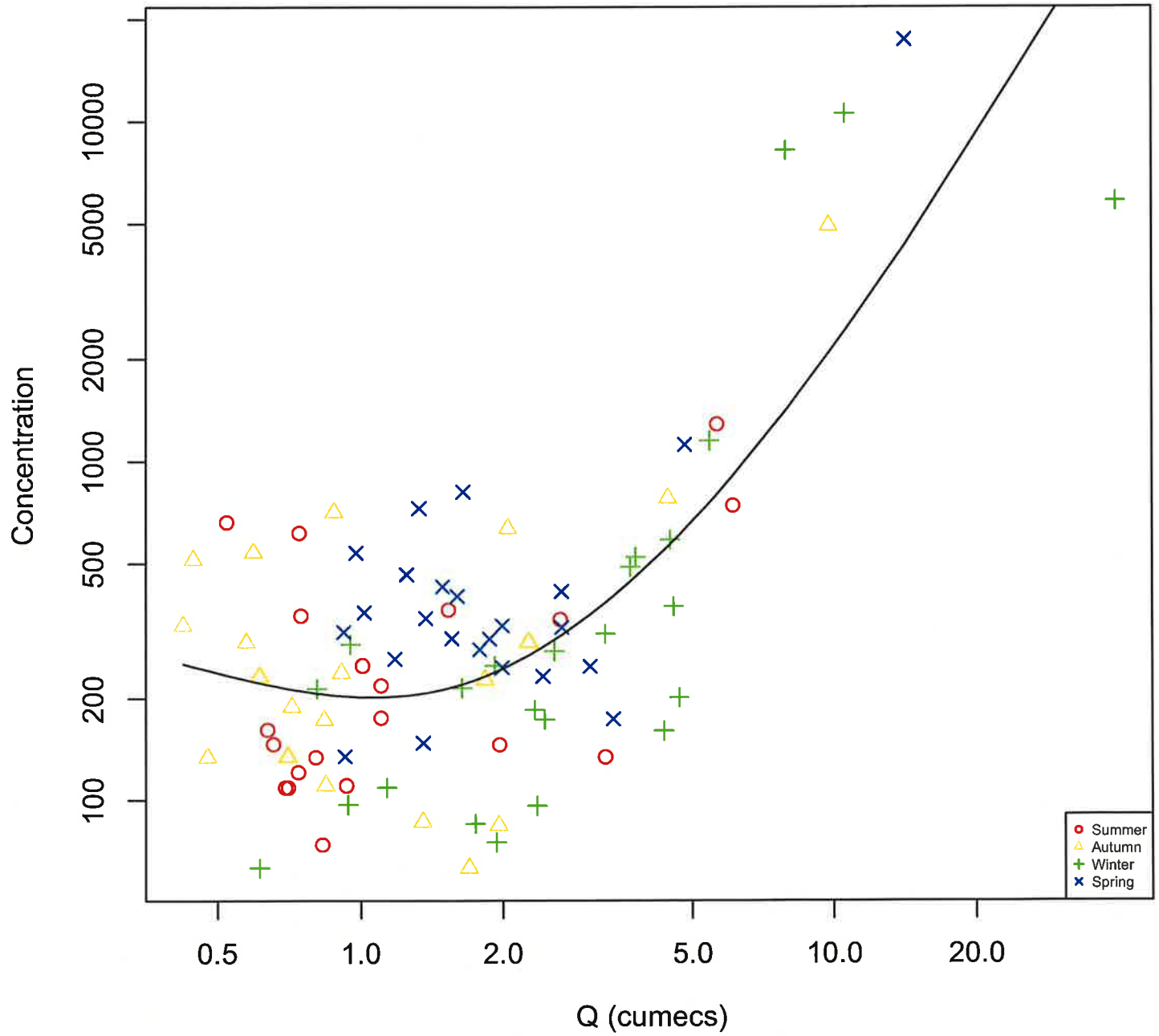
105008 : Ruakaka River at Flyger Road Bridge



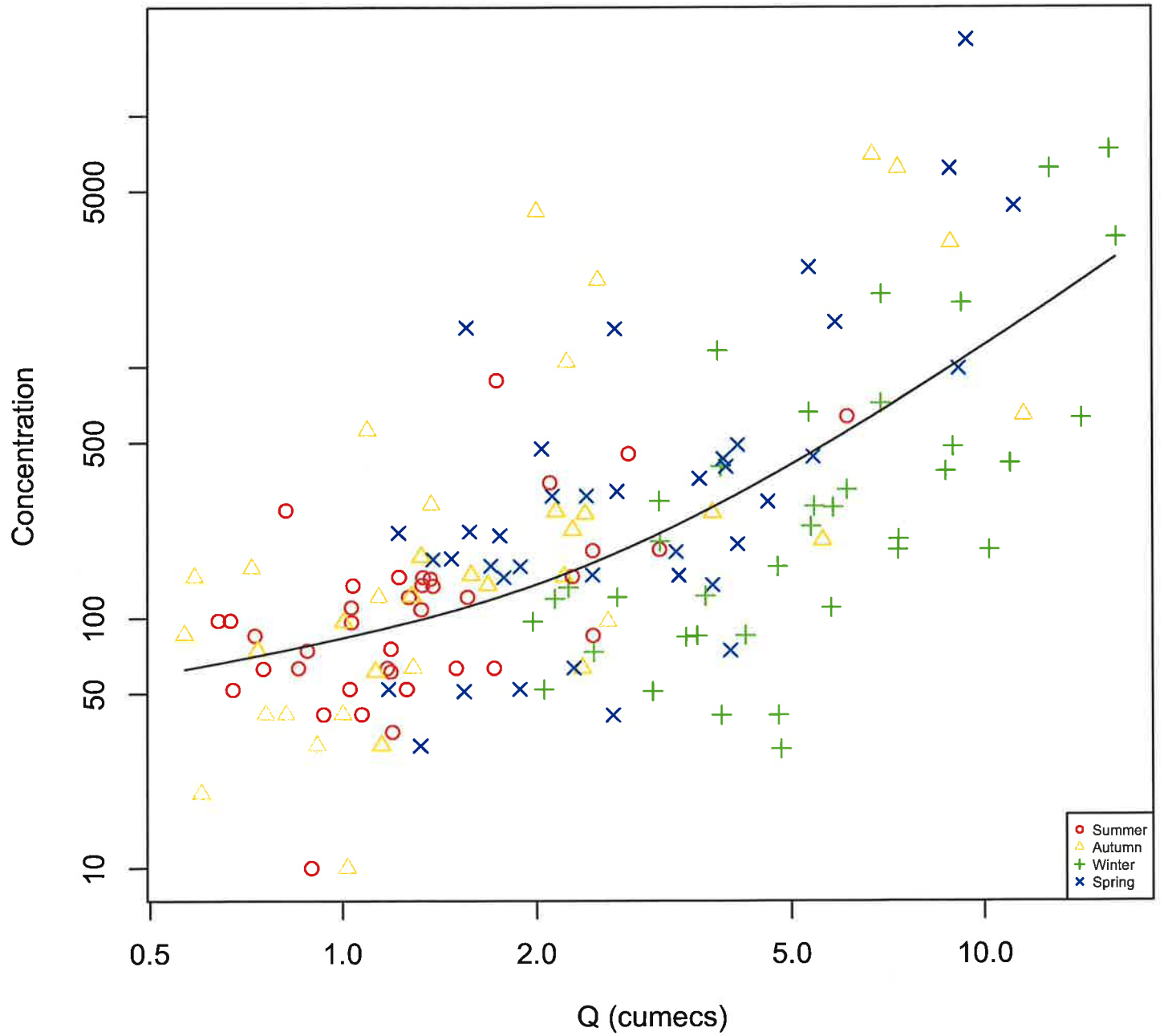
102674 : Kaeo River at Dip Road Bridge



108979 : Oruru River at Oruru Road



102256 : Kaihu River at Gorge



ISSUE: Biosecurity Update

ID: A785514

To: Environmental Management Committee, 27 October 2015

From: Don McKenzie, Biosecurity Manager

Date: 2 October 2015

Report Type:	<input checked="" type="checkbox"/> Normal operations	<input checked="" type="checkbox"/> Information	<input type="checkbox"/> Decision
Purpose:	<input type="checkbox"/> Infrastructure	<input type="checkbox"/> Public service	<input type="checkbox"/> Regulatory function
	<input type="checkbox"/> Legislative function	<input type="checkbox"/> Annual\Long Term Plan	<input type="checkbox"/> Other
Significance:	<input type="checkbox"/> Triggered	<input checked="" type="checkbox"/> Not Triggered	

Executive Summary:

This report describes progress on key biosecurity issues across the region and updates on kiwifruit vine disease, marine and animal pests, and wild ginger.

Legal compliance and significance assessment:

The council activities detailed in this report are provided for in activities described in the council's 2015-2025 Long Term Plan and as such are in accordance with the council's decision making process and sections 76-82 of the Local Government Act 2002.

This matter is considered to be of low significance, as the report is only provided to be received for information.

Recommendation(s):

That the report Biosecurity Update by Don McKenzie, Biosecurity Manager and dated 2 October 2015 be received.

Report

Kiwi Vine Disease

In late September, Kiwifruit Vine Health (KVH) received a positive *Pseudomonas syringae* pv. *actinidiae* (Psa) test result on a kiwifruit orchard in Whangarei. This is the first confirmed case of the disease in the Whangarei region. Kiwifruit vine health (KVH) has put in place a controlled area notice and movement controls are in place to limit the spread of Psa within the region. The controlled area is an 8km radius from the infected orchard with 32 orchards located within the controlled area. No further evidence of PSA has been detected in surrounding orchards. Northland Regional Council staff have been working with the kiwi fruit industry since 2011 and prior to the disease being detected in Northland. Unmanaged and derelict vines which would have posed a risk of infection to growers were removed as part of the agreement between KVH and the Northland Regional Council. This ongoing work has been applauded by the regional growers who maintain the vine removals helped stall the arrival of Psa giving growers 2-3 additional growing seasons and allowing them to

prepare their disease management regimes. Regional Council staff attended a meeting of Whangarei growers following the announcement and will continue to work with grower representatives to assist where possible and in accordance with the joint council and KVH Memorandum of Understanding. Further information is available via the KVH website. <http://www.kvh.org.nz/>

Marine Biosecurity

Northland marinas, with the support of Northland Regional Council (NRC) have put in place new conditions for vessel owners visiting Northland this summer. Boats will require proof of either a new antifoul within the last six months, or a lift and wash within the last month to be able to enter a marina and the message is being promoted as “**Six or One**”. NRC took this message to the annual On-water boat show in Auckland where it was well received and marinas as far south as Whitianga are also making it a requirement. The majority of the visitors to the NRC display recognised Mediterranean fanworm and were asking what they were required to do, to be able to visit Northland. Recent surveillance of east coast structures for Mediterranean fanworm have been encouraging with structures at Opuia, Waitangi, Russell, Houhora, Mangonui and Whangaroa being free of fanworm. Re-checks and audits of known fanworm sites including Tutukaka, Kissing Point, Portland, Port Nikau and Marsden Cove marina have seen numbers continue to drop. In addition a recent survey at Kissing Point Whangarei confirmed all structures are clear of fanworm for the second consecutive check.

A dive survey has been completed at Marsden Cove marina and the marina berths and canals in stage one have met the standard set by the notice of direction - fanworm populations are low around these structures. Owners have been advised the notice has been lifted and staff understand they intend maintaining a monthly cycle of inspection and harvesting.

Fanworm numbers in stage two of the marina have been reduced by the owners through the use of divers and plastic covers which have been used to smother the rip rap walls. However this area requires more effort and staff are working with the structure owners to plan a way forward. The notice of direction will remain in place for this area.

War on wild ginger

New Zealand plays host to an invasive ginger species (*Hedychium gardnerianum*) a hybrid of the Kahili and white ginger lily species. The plant grows over two metres tall and produces a massive network of thick rhizomes. In our milder northern climates it spreads quickly and grows rapidly, being spread by root fragments and its seeds carried by birds. It is particularly problematic in the Hokianga and Russell State forest areas, with 1500ha of bush and forestry land along the borders of Russell State forest currently lost to invasive ginger. At this stage, it is beyond conventional methods of removal (manual or chemical), so NRC is investigating other methods such as biological controls (tested overseas by Landcare Research) and community involvement. Meetings with iwi, landowners, DOC and forestry representatives are currently underway to consider methods of funding the import of biological controls and how to raise the issue with affected communities.

Project Waipoua

A new large scale pest management project is currently being discussed with Te Roroa, Northland Regional Council, Department of Conservation and Ministry for Primary Industries and other agencies. This new project initiative is aiming to manage

a range of threats over a large area of the west coast of Northland. Threats include Kauri Dieback, pest animals, weeds and freshwater. This project would look to appoint a project co-ordinator to plan actions and deliver the plan with support from contributing agencies.

Warawara pest control

Approval to proceed with the Warawara forest poison operation has been granted by the Ministry of Health and the Department of Conservation (DOC) will start to apply 1080 to the public conservation land during October. Possum bait will also be placed in bait stations throughout the surrounding private land.

Whangarei Heads Pest Management Committee

An inaugural meeting was held on 9 September with the nominated members of the Whangarei Heads Pest Management Liaison Committee. The primary focus of this initial meeting was to explain the role of the committee and how to best meet the needs of the community. Members agreed to continue the current funding for kiwi predator control as per the Whangarei Heads Kiwi Predator Control 2011-2015 community pest control agreement. The committee is currently developing a plan to start to address some of the weed issues within the targeted rate area. A Whangarei Heads pest management plan for kiwi protection and weed control will be developed over the coming months ready for implementation in the 2016/17 financial year.

Nominated representatives are:

Cr Paul Dimery	Northland Regional Council
Greg Innes	Whangarei District council / Whangarei Heads Resident and Citizen Association
Robyn Bigelow	Weed Free Whangarei Heads
Catherine McNamara	Backyard Kiwi Project
Philip King	Whangarei Heads Landcare Forum

Meeting minutes attached below.

WHANGAREI HEADS PEST MANAGEMENT COMMITTEE

Report of the Inaugural meeting of the Whangarei Heads Pest Management Committee, held on Wednesday 9 September 2015
At McLeods Bay Hall, Whangarei Heads commencing at 7.30pm

Present:

Committee Members

Paul Dimery (Chair)	Northland Regional Councillor
Greg Innes	Whangarei District Council representative - Whangarei Heads and local citizen and rate payers associations
Robyn Bigelow	Weed Free Whangarei Heads
Catherine McNamara	Backyard Kiwi Project

Also in Attendance

Don McKenzie	Northland Regional Council
Kane McElrea	Northland Regional Council

Apologies:

Philip King; Whāngārei Heads Landcare Forum and Whāngārei Heads Citizens Association.

Moved (Dimery/Bigelow)

That the apology from Philip King; Whāngārei Heads Landcare Forum for absence be received.

Carried

REVIEW OF DRAFT TERMS OF REFERENCE

Councillor Dimery opened the meeting and referred members to the agenda (attached) and articles attached as part of the information package and requested support staff of the NRC give an overview of the aims of the targeted rate and the area to which the rate refers.

Kane McElrea referred attendees to the attached Terms of Reference and the accompanying map of the rateable zone as well as the statement describing the rate extracted from the Long Term Plan. Discussion was held regarding the Terms of Reference.

Moved (Dimery/Bigelow)

To define in the terms of reference the word "Pests" to include "animals and weeds".

Carried

Moved (McNamara/Innes)

That the wording in the terms of reference be changed under the "Purpose" and the words "self- sustaining" be removed so that the sentence reads " *To ensure the successful community led pest management programme continues at the Whāngārei Heads*".

Carried

Moved (Dimery/Bigelow)

That the **Terms of Reference** be accepted with minor changes.

Carried

REPRESENTATION

Kane explained the aim to have ratepayer representation was limited at this stage and did not extend to agencies or other stakeholders such as QE2, DOC, WDC etc but that committee members wore many "community hats" and it was hoped that the current representation would be efficient and effective. It was noted that an invitation had been extended to Ngatiwai and Councillor Dimery offered to follow up on this.

Action: Paul to discuss with Ngatiwai inclusion of an Ngatiwai rep on the committee and report back at the next meeting.

BUDGET

Kane summarized the budget printout (attached) noting the sum of \$89565 plus GST as the total available and the rate collection fee of \$6269 being recovered from WDC. Greg offered to confirm WDC was not going to charge for this.

Action: Greg to report back on the cancellation of the WDC admin fee charges.

KIWI PREDATOR CONTROL

Kane distributed copies of the Whangarei Heads Kiwi Predator control plan and explained the intent to run with this plan until the end of June 2016 when it expired. In addition and over the next few months a new plan would be drafted for comment (Kane to lead development for this draft). He expected a draft to be available early in the New Year.

WEED CONTROL

Weed control did not have an existing plan and it was proposed by staff of the NRC that Weed Free Whāngārei Heads consider how best to utilise the weed portion of the targeted rate (approximately \$25k) to fund weed control within the rated zone.

Robyn Bigelow gave an overview of the weed group and the strategy stressing the group would benefit from a coordinator to assist with volunteer days etc. The strategic plan was currently in development by the group and it was agreed the rate should contribute to the outcomes of this Strategic plan and that the funding would help leverage additional resourcing for weed control work at the Heads. It was stressed that funds could only be spent on private land and that the rate was not intended to favour individual landowners who may have major weed problems but did not wish to contribute to control in a significant way.

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Councillor Dimery suggested that PD workers could also be considered as part of the weed control team and members agreed this could be assessed as part of the overall plan.

Action: Robyn to report back on a proposal for weed control expenditure.

COMMUNICATION

Cr Dimery stressed that the Northland Regional Council wanted to work behind the scenes in support and that any significant media issues could be brought back to the committee or communicated by email to the group.

CONCLUSION

Meetings were scheduled once every two months.

The Meeting closed at 8.30pm.

The next meeting will be held on Wednesday 11 November commencing at 7pm – venue is Robyn's Place, Darkies Hill, 113 Whangarei Heads Road.)

ISSUE: **Update on Coastal Hazard Assessments for Northland**

ID: A784920

To: Environmental Management Committee, 27 October 2015

From: Bruce Howse, Group Manager Environmental Services and Toby Kay, Natural Hazards Advisor

Date: 5 October 2015

Report Type:	<input type="checkbox"/> Normal operations	<input checked="" type="checkbox"/> Information	<input type="checkbox"/> Decision
Purpose:	<input type="checkbox"/> Infrastructure	<input type="checkbox"/> Public service	<input checked="" type="checkbox"/> Regulatory function
	<input type="checkbox"/> Legislative function	<input type="checkbox"/> Annual\Long Term Plan	<input type="checkbox"/> Other
Significance:	<input type="checkbox"/> High	<input type="checkbox"/> Moderate	<input checked="" type="checkbox"/> Low

Executive Summary

The purpose of this report is to provide an update on the coastal hazards assessments in progress for Northland.

Legal compliance and significance assessment

The council activities detailed in this report are provided for in activities described in the council's 2015-2025 Long Term Plan and as such are in accordance with the council's decision making process and sections 76-82 of the Local Government Act 2002.

This matter is considered to be of low significance, as the report is only provided to be received for information.

Recommendation(s):

That the report on Coastal Hazard Assessments for Northland by Bruce Howse, Group Manager Environmental Services, and Toby Kay, Natural Hazards Advisor, and dated 5 October 2015, be received.

Background

There are two coastal hazard assessments for Northland currently being progressed by Tonkin & Taylor (T&T), including a coastal erosion hazard zone (**CEHZ**), and a coastal flood hazard zone (**CFHZ**) assessment. These assessments include new areas which have not previously been mapped, as well as areas for which there are already mapped coastal hazard zones in District Plans.

Policy Framework

The methodology adopted for these projects is compatible with policy 24 of the New Zealand Coastal Policy Statement (NZCPS 2010), except that potential tsunami hazard over a 100 year time frame has not been assessed. The policy states:

Policy 24 Identification of coastal hazards

- (i) Identify areas in the coastal environment that are potentially affected by coastal hazards (including tsunami), giving priority to the identification of areas at high risk of being affected. Hazard risks, over at least 100 years, are to be assessed having regard to:
 - (a) physical drivers and processes that cause coastal change including sea level rise;
 - (b) short-term and long-term natural dynamic fluctuations of erosion and accretion;
 - (c) geomorphological character;
 - (d) the potential for inundation of the coastal environment, taking into account potential sources, inundation pathways and overland extent;
 - (e) cumulative effects of sea level rise, storm surge and wave height under storm conditions;
 - (f) influences that humans have had or are having on the coast;
 - (g) the extent and permanence of built development; and
 - (h) the effects of climate change on:
 - (i) matters (a) to (g) above;
 - (ii) storm frequency, intensity and surges; and
 - (iii) coastal sediment dynamics;taking into account national guidance and the best available information on the likely effects of climate change on the region or district.

Method 7.1.8 of the Proposed Regional Policy Statement identifies that the Regional Council will investigate and define areas potentially affected by coastal hazards over at least the next 100 years, progressively map them, and make this information available to the District Councils for inclusion in District Plans and anyone else on request.

Geographical Extent of the New Assessment

The CEHZ assessment includes 31 coastal sites, all of which are located on the open coast and directly exposed to ocean swell. The CFHZ assessment includes 61 coastal sites which have been covered by LIDAR survey. Approximately half the CFHZ sites are located on the open coast, whilst the remainder are harbor and estuary sites which are to some extent sheltered from ocean swell. The location of the sites covered by the CFHZ assessment are shown in Attachment 1 of this report. Virtually all of the CEHZ sites are also CFHZ sites.

Time frames Relating to Coastal Hazard Zones

The areas potentially affected by coastal hazards are likely to change over time in response to coastline changes and projected sea level rise. For the new coastal hazards assessments, three different time frames have been adopted

Assessment	Zone 0 (2015)	Zone 1 (2065)	Zone 2 (2115)
Years from present:	0	50	100
Rationale for time frame	Insurance	Building Act	NZCPS
Coastal Hazard Assessed	CFHZ	CFHZ, CEHZ	CFHZ, CEHZ
CFHZ event considered	1% AEP	2% AEP	1% AEP

Coastal Erosion Hazard Zone (CEHZ) Assessment

Coastal erosion hazard zones represent the potential future position of the foreshore over the time frames assessed. The assessment recognizes that coastal erosion processes are gradual, but with marked changes often occurring during coastal storm events. Short term and long term trends have been assessed from beach profile surveys and historical aerial photographs of the coastline. Sea level rise is predicted to increase the rate of coastal erosion, due to a re-positioning of material from the foreshore to the sea bed.

The methodology for the CEHZ assessment has been peer reviewed.

Coastal Flood Hazard Zone (CFHZ) Assessment

The coastal flooding considered in this assessment is from coastal storm surge and associated wave action. For open coast sites, coastal run up hazard zones (CRHZ) are being mapped along the foreshore. Coastal flood hazard zones (including CRHZ), represent the flooding predicted during a large coastal storm surge event, both present day (Zone 0), and into the future (Zones 1 and 2). Projected sea level rise over the next 100 years accounts for the difference between coastal flood hazard zones 0, 1 and 2.

Projected sea level rise, and coastal erosion accounts for the difference between coastal run up hazard zones 0, 1 and 2. Future coastal run up for zones 1 and 2 is assessed based on the predicted future location of the foreshore, derived from the CEHZ assessment.

The CFHZ assessment is based on historical records from Northland tide gauges, wave modelling data, and sea level rise projections in line with the IPCC 5th Assessment Report. The assessment has been peer reviewed.

Timeline for Public Release of the Mapping

Final CEHZ and CFHZ mapping is expected to be delivered by T&T in early November 2015. Final outputs will be peer reviewed prior to public release.

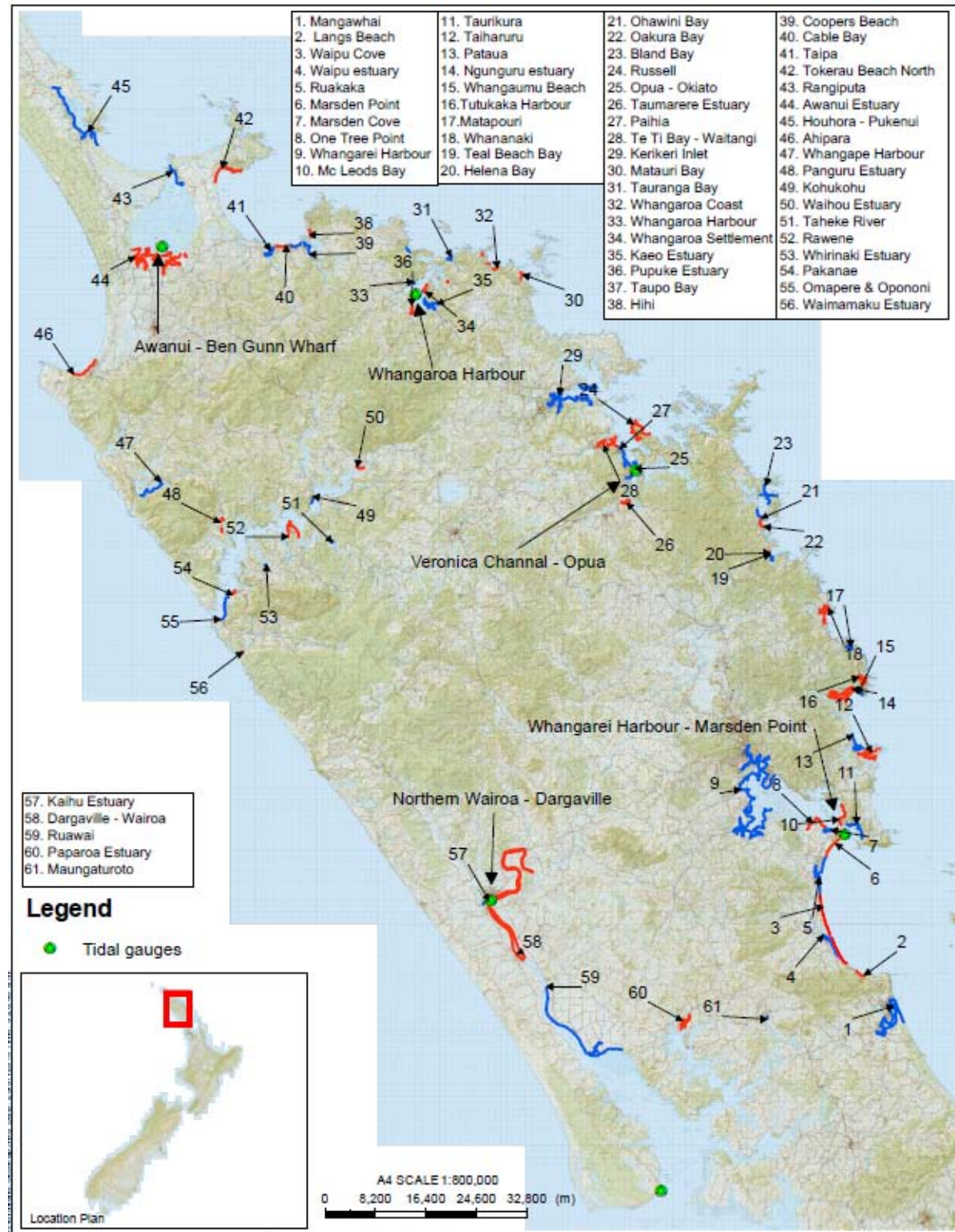
A Council workshop on Natural Hazards in relation to climate change is scheduled for 5 November. It is expected that outputs from the coastal hazards assessments will be available for this workshop.

A workshop on the new CFHZ with technical and planning staff from the three Territorial Authorities has been scheduled for 27 November.

Given the need for peer review of final outputs, it is likely that the updated coastal hazard zone maps will be made available to the public during the first quarter of 2016.

Attachment 1

Locations of CFHZ sites, showing sections of coastline assessed



ISSUE: Update on Rainfall and Water Resources

ID: A786083

To: Environmental Management Committee, 27 October 2015

From: Jason Donaghy, Water Resources/Hydrology Manager

Date: 5 October 2015

Report Type:	<input checked="" type="checkbox"/>	Normal operations	<input checked="" type="checkbox"/>	Information	<input type="checkbox"/>	Decision
Purpose:	<input type="checkbox"/>	Infrastructure	<input type="checkbox"/>	Public service	<input type="checkbox"/>	Regulatory function
	<input type="checkbox"/>	Legislative function	<input type="checkbox"/>	Annual\Long Term Plan	<input type="checkbox"/>	Other
Significance:	<input type="checkbox"/>	Triggered	<input checked="" type="checkbox"/>	Not Triggered		

Executive Summary:

The purpose of this report is to present to the council an update on Northland's rainfall patterns, soil moisture deficits, groundwater levels and river flows. It concludes with the recommendation that the council receives the report and supports the proposed response/monitoring plan.

Legal compliance and significance assessment:

The activities detailed in this report are provided for in the council's 2015-25 Long Term Plan, and as such are in accordance with the council's decision-making process and Sections 76-82 of the Local Government Act 2002.

Recommendations:

That the report Update on Rainfall and Water Resources by Jason Donaghy, Water Resources/Hydrology Manager and dated 5 October 2015, be received.

Background

Both the MetService and NIWA have provided monthly updates on the El Nino situation since May 2015.

The latest outlook puts the likelihood of El Nino persisting throughout summer at 99% probability. MetService and NIWA have predicted the current event will potentially be among the four strongest El Niño events recorded since 1950 (along with 1972/73, 1982/83, 1997/98).

It should be noted that a large scale El Nino event does not necessarily equate to a high magnitude drought, see below:

Fig 1: El Nino versus Northland Droughts

Major El Nino events	Northland Droughts
1950	20 year return period

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1972/73	8 year return period
1982/83	40 year return period
1997/98	No drought declared

50% of the global weather models predict the El Nino event to persist through to autumn 2016 (Refer to fig 5).

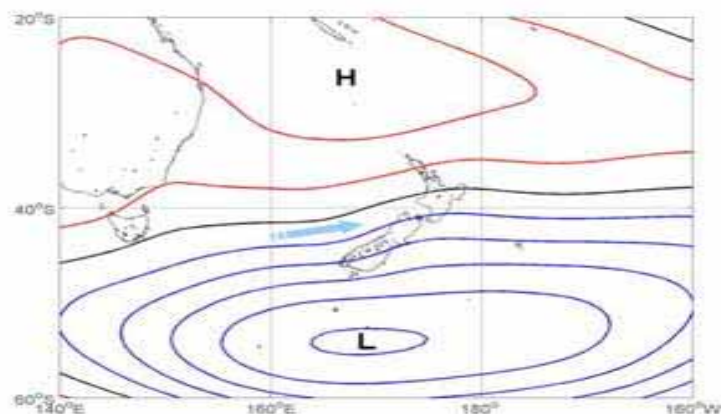
During the coming months, three sources of data will be used to track the El Nino status, these are:

1. MetService
2. NIWA
3. NRC hydrometric network

8 rainfall sites have been selected to represent the region, based on long term record and locality.

Below is a basic definition of El Nino and the characteristic weather patterns observed.

A typical flow pattern in an El Nino would feature an anticyclone just to the northwest of New Zealand and an area of low pressure to the southeast. This in turn would bring enhanced westerlies across New Zealand as shown below. The enhanced westerlies would bring normal to above normal rainfall to western areas and below normal rainfall to eastern areas. Troughs would frequently cross the country in the westerlies, bringing changeable and unsettled weather.



Current Situation

Northland has not received a major rainfall event during the 2015 winter/autumn period (refer to Fig 4).

The table below shows the rainfall deficits for the year as of 1 October at various locations around Northland.

Fig 2: Rainfall deficit for Northland

Location	Rain mm to 1 October 2015	Expected Rainfall mm to 1 October 2015	Surplus/Deficit mm	Surplus/Deficit %
Kaitaia	799	1081	-282	-26%
Kaikohe	964	1237	-273mm	-22%
Kerikeri	898	1355	-358mm	-34%
Whangarei	868	1211	-214mm	-28%
Dargaville	751	957	-330mm	-21%
Ruawai	727	808.1	-81mm	-10%
Opononi	902	948.4	-46mm	-5%
Tara	809.5	1241	-258mm	-35%

The current deficits are concerning for a number of areas, especially for districts reliant on winter/ autumn rains to recharge the aquifers used for municipal supply.

- **Whangarei Central:** A rainfall deficit of -28%. The winter rains have not recharged the Maunu/ Whatitiri Aquifers to normal levels. (Refer Fig 7).
- **South Whangarei:** A rainfall deficit of -35%. The Mangawhai groundwater aquifer has not recovered sufficiently since the 2013 dry period combined with the current rainfall deficit has resulted in the system sitting well below the average water level for September. (Refer Fig 7)

The combination of low groundwater levels and regional rainfall deficit means potentially the rivers and streams will reach their base flows quicker than normal leading into summer.

The three climate stations reading soil moisture levels across Northland show deficits to be near normal for this time of the year, levels will start to decline through October. El Nino may cause the soil moistures deficits to drop earlier, if the westerly winds prevail as predicted.

Outlook

Rainfall for October 2015 is predicted to be below normal, with prevailing westerly systems which typically do not yield much rain.

The National Institute of Water and Atmosphere (NIWA) seasonal climate outlook for October – December 2015 indicates a strong El Niño is well-established, with the SOI index at -1.8, and may strengthen over the next 3 months. (Refer to Fig 8).

Fig 8: NIWA Seasonal outlook for Northland for Sep-Nov 2015

	Temperature	Rainfall	Soil moisture	River flows
Above average	20	20	25	20
Near average	40	40	40	45
Below average	40	40	35	35

- Temperatures and rainfall totals are equally likely to be near average (40% chance) or below average (40% chance).
- Soil moisture levels are about equally likely to be in the near normal (40% chance) or below normal (35% chance) ranges.
- River flows are most likely to be near normal (45% chance).

Response and Monitoring Plan

In respect of the predictions, the following response and monitoring is proposed:

- Continue to closely monitor rainfall, ground water levels and river flows incorporating the council's hydrometric network and rainfall and water level stations operated by NIWA and MetService.
- If Monitoring identifies areas of potential water depletion: letters to major water users, including road construction companies, informing of current conditions, future rainfall and river flow predictions and notification of impending water shortages.
- Provide regular climate and water resources updates to council, Northland Drought Committee, Territorial Authorities, Northland Rural Support Trust and major industrial/agricultural water users.
- Closely monitor major water takes and water take incidents throughout the prolonged dry period.
- If serious water shortages are likely then contact will be initiated with the key water users to work with them on contingency plans.
- Work closely with the MetService and NIWA scientists to determine rainfall probabilities and low flow predictions.

Fig 4: Rainfall Patterns (% of average) May 2015 to September 2015

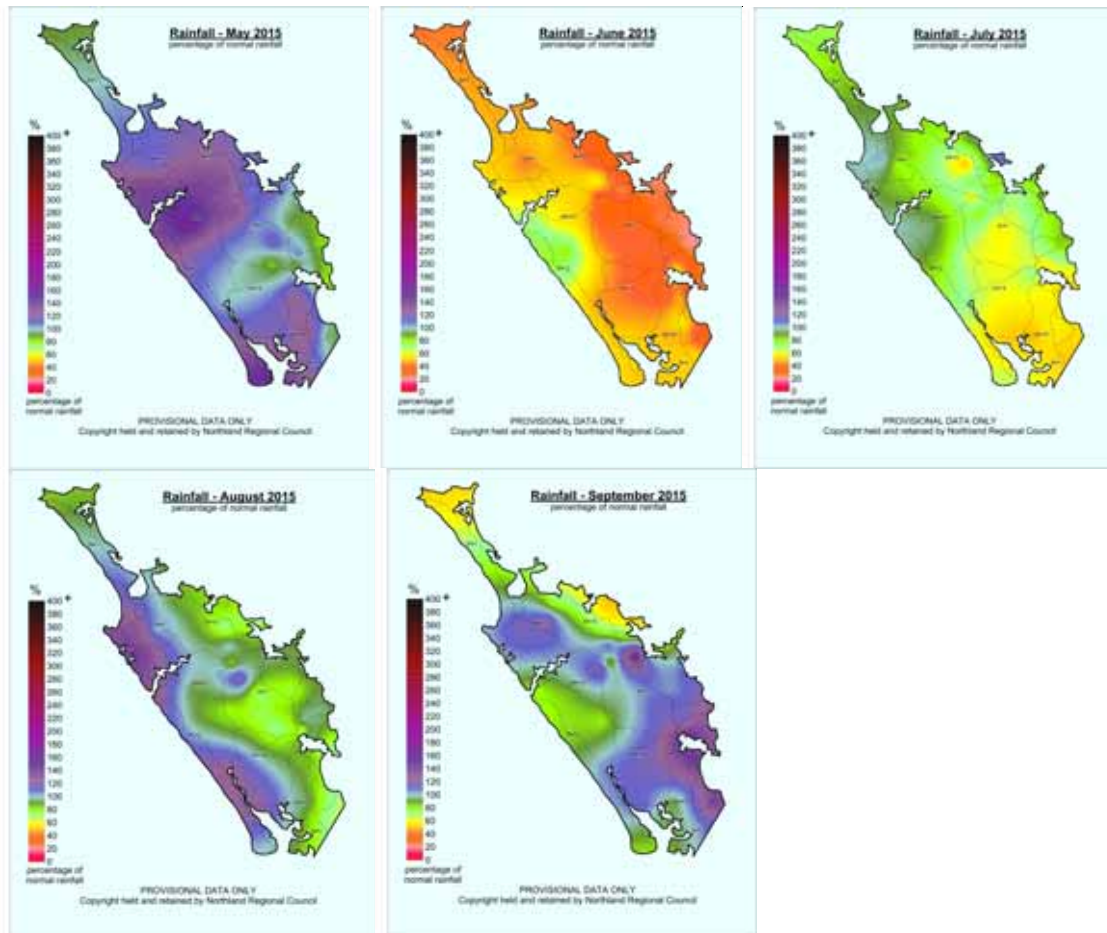
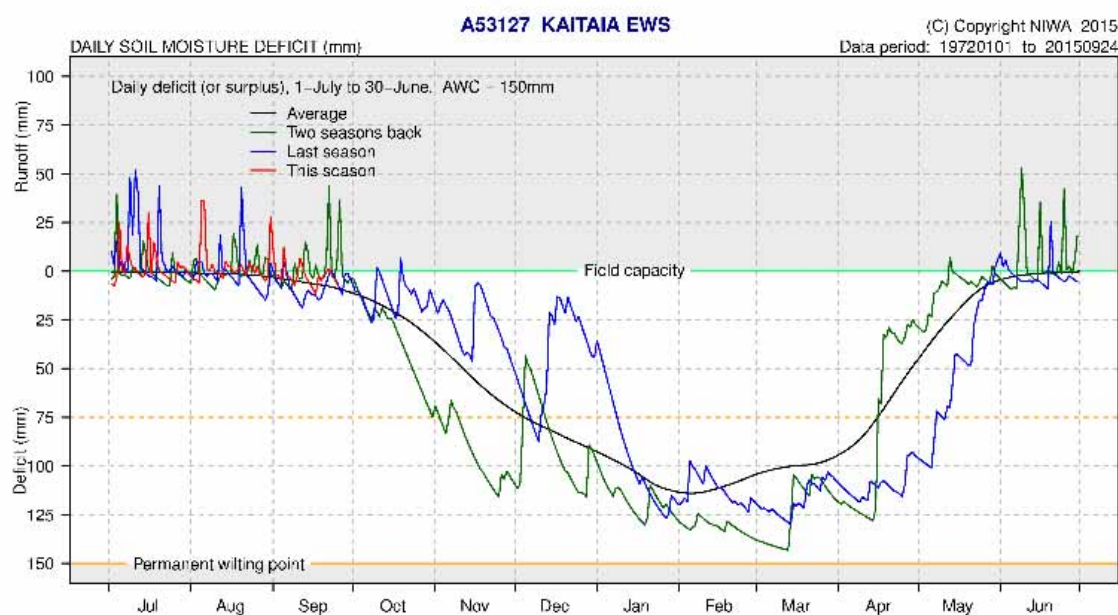


Fig 5: Table: Summary of main seasonal climate model results [± 0.7 threshold used]

Climate Model or Group	SON 2015	DJF 2015/16	MAM 2016
POAMA2.4 (Australia)	El Niño	El Niño	Unavailable
ECMWF (EU)	El Niño	El Niño	Unavailable
EuroSIP (EU)	El Niño	El Niño	Unavailable
LDEO5 (USA)	El Niño	El Niño	El Niño
NCEP CFS (USA)	El Niño	El Niño	El Niño
Met Office (UK)	El Niño	Unavailable	Unavailable
SCRIPPS/MPI (USA/FRG)	El Niño	El Niño	El Niño
NASA-GMAO (USA)	El Niño	El Niño	Unavailable
JMA (Japan)	El Niño	El Niño	Unavailable
FRCGC SINTEX (Japan)	El Niño	El Niño	El Niño
CPC CCA (USA)	El Niño	El Niño	El Niño
NOAA Linear Inverse (USA)	El Niño	El Niño	Neutral+
CLIPER (USA)	El Niño	El Niño	El Niño
Florida State Univ. (USA)	El Niño	El Niño	El Niño

Fig 6: Soil Moisture Deficits for Northland



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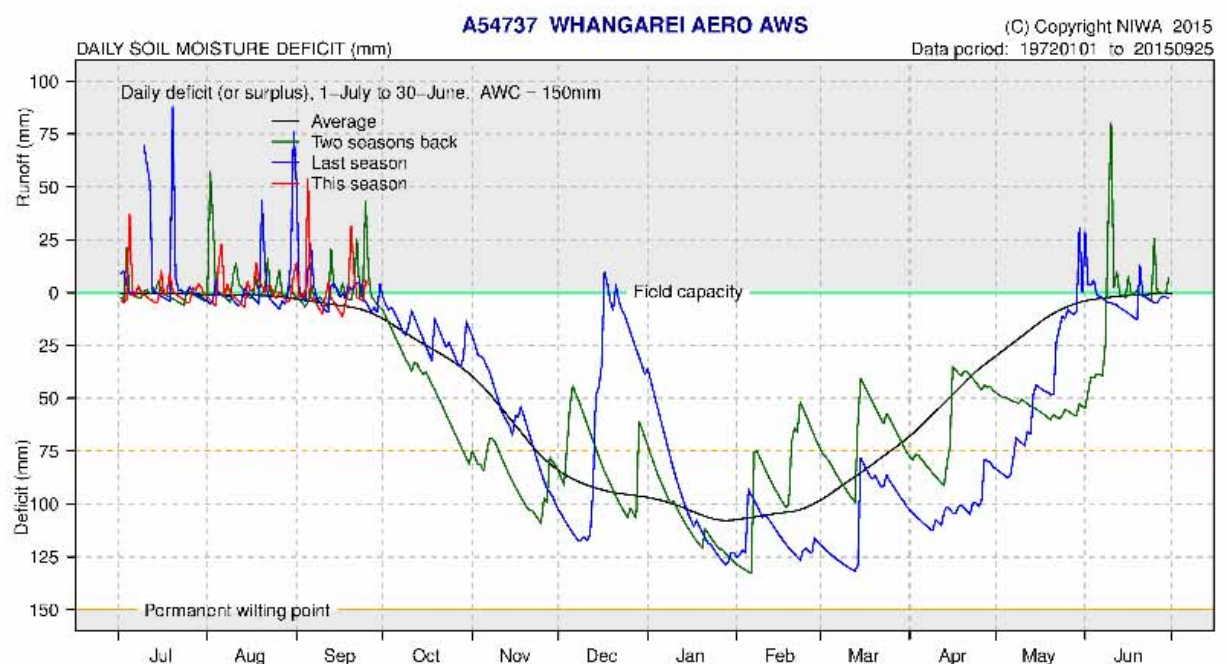


Fig 7: Mangawhai Groundwater Levels at Medical Centre & Poriti West:

RED= Long term average

BLACK= Actual water level

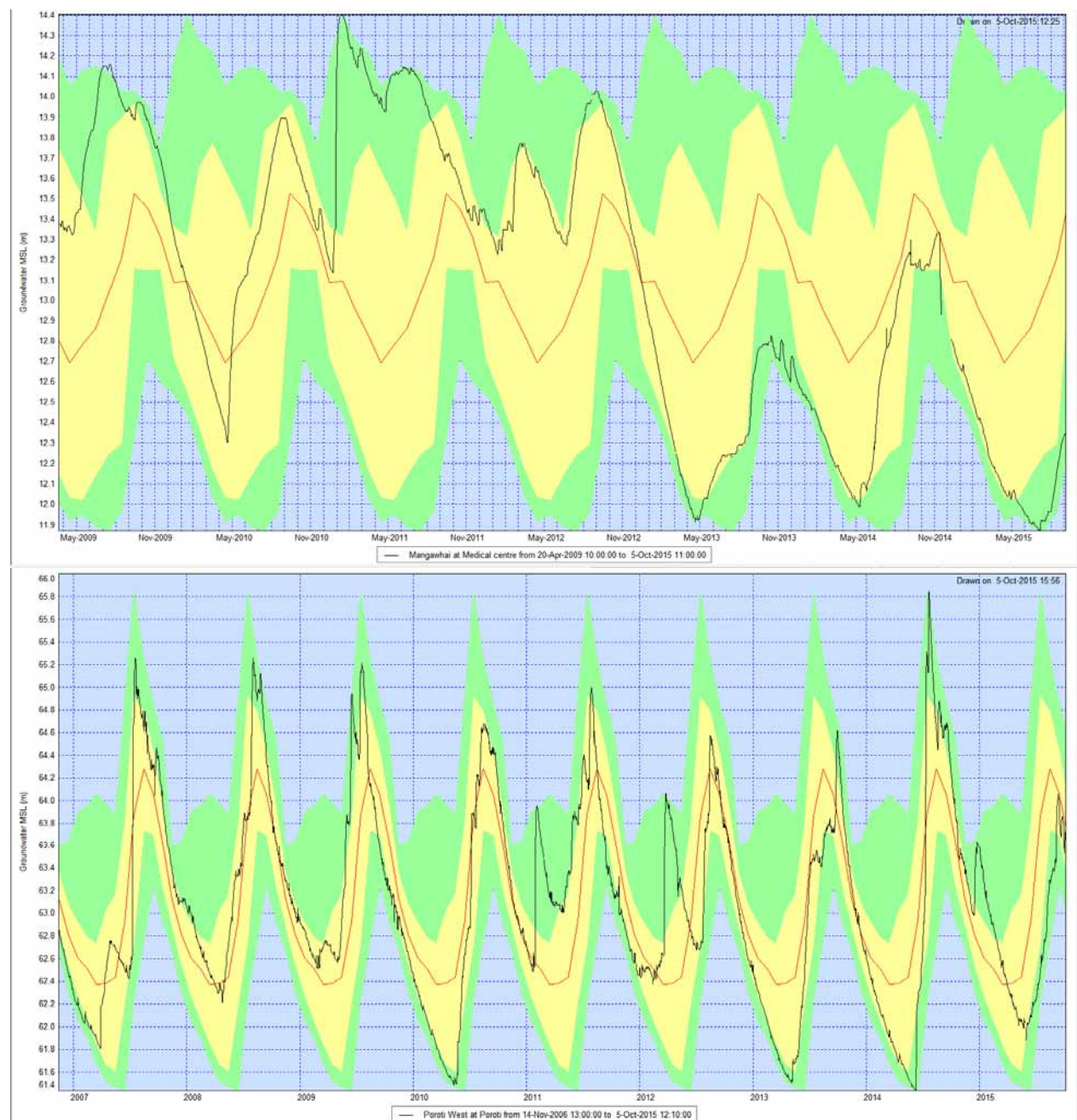
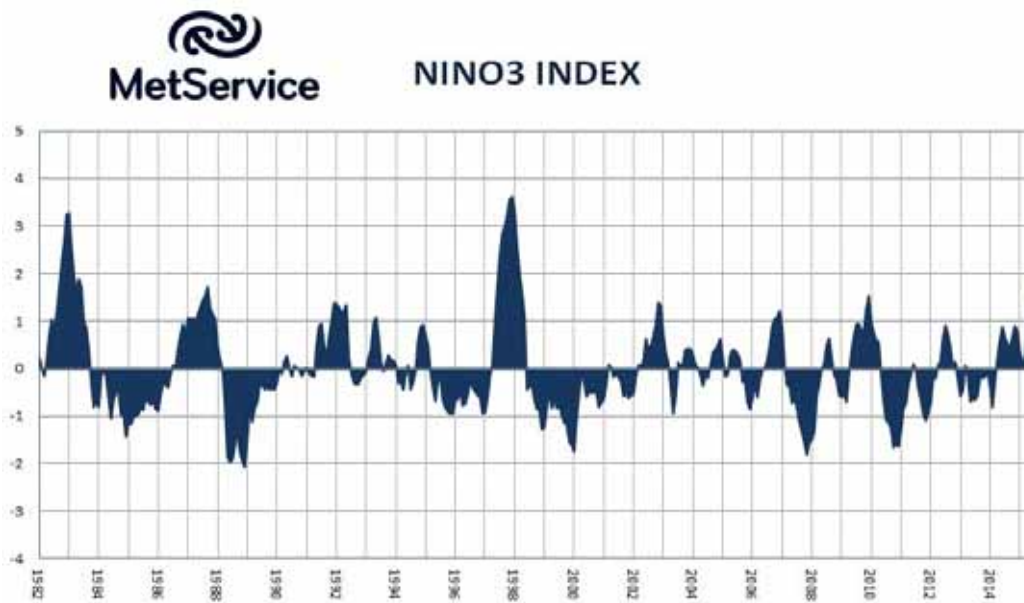


Fig 8: NINO3 index



ISSUE: Farm dairy effluent volume reduction project

ID: A785170

To: Environmental Management Committee, 27 October 2015

From: Dennis Wright, Farm Monitoring Manager

Date: 5 October 2015

Report Type:	<input type="checkbox"/> Normal operations	<input checked="" type="checkbox"/> Information	<input type="checkbox"/> Decision
Purpose:	<input type="checkbox"/> Infrastructure	<input type="checkbox"/> Public service	<input type="checkbox"/> Regulatory function
	<input type="checkbox"/> Legislative function	<input type="checkbox"/> Annual\Long Term Plan	<input checked="" type="checkbox"/> Other
Significance:	<input type="checkbox"/> Triggered	<input checked="" type="checkbox"/> Not Triggered	

Executive Summary:

The purpose of this report is to give an update on an initiative undertaken by the FDE compliance monitoring team. The initiative is aimed at improving dairy farm environmental performance by reducing the volumes of FDE generated.

Legal compliance and significance assessment:

The activities detailed in this report are provided for in the council's 2015-25 Long Term Plan, and as such are in accordance with the council's decision-making process and Sections 76-82 of the Local Government Act 2002.

In relation to section 79 of the Local Government Act 2002, this issue is considered to be of low significance under Council policy because the report does not seek a decision other than that information be received.

Recommendation:

That the report Farm dairy effluent volume reduction project by Dennis Wright, Farm Monitoring Manager and dated 5 October 2015, be received.

Report

The FDE compliance monitoring team has for many years promoted:

- Large effluent storage ponds
- Effective land application systems; and
- Consented discharge of treated farm dairy effluent when application to land is not practicable.

The approach has been successful with at least 70% of farms now having land application systems.

However it has been obvious for some time that excessive effluent volumes are being generated. This contributes to a large percentage of “significant non-compliance” with regional rules and consent conditions but also results in:

- Excessive water being taken from within catchments.
- Higher than necessary pumping, storage and effluent disposal costs.
- Unnecessary FDE discharges to water.

The Project

Two farms were selected to take part in the project in September 2013.

Farm 1

Ten meters were installed at the first farm in November 2013. Improvements were made over time, with water use reduced by 50%. Effluent volumes have been reduced by more than 50%. Final changes will be made at the dairy within the next 2 weeks to achieve further savings. The project will be completed on this farm by 31 January 2016. Results to date are summarized in Tables 1 and 2 below.

Table 1 - Daily Water Use (Farm 1)

	Before changes	After changes	Reduction
Average daily water use	36.22 m ³	18.93 m ³	17.29m ³ (-48%)

Table 2 - Estimated Annual Effluent Volume Reduction (Farm 2)

Water Savings	6311 m ³
Catchment stormwater Diversion	1297 m ³
TOTAL	7608 m³

Farm 2

Four telemetry units and 9 meters were installed in September 2014. The use of telemetry made monitoring of daily use more accurate and timely. A sample of the telemetered data is at Figure 1.

Improvements to date have resulted in water use being reduced by approximately 40%. The effluent volume has been reduced by almost 50%. The results are shown in Tables 3 and 4.

Further changes will be made this month and monitoring will continue until the end of the current dairy season. There can then be a full comparison made over the two seasons.

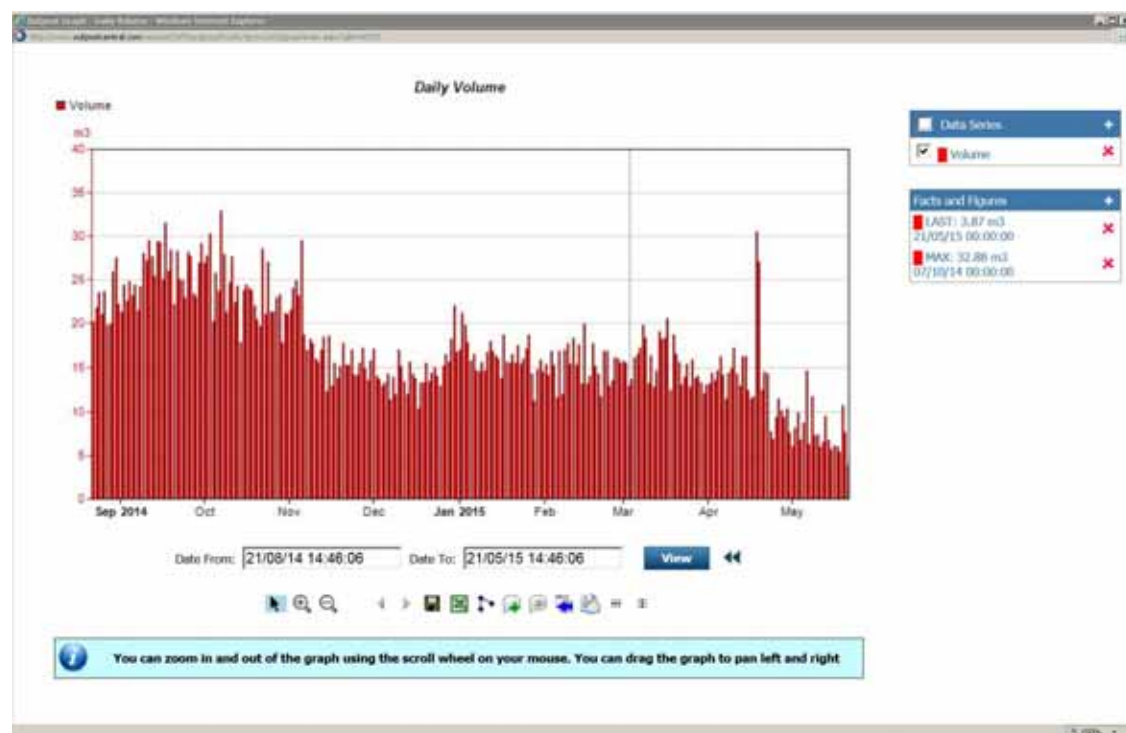


Figure 1 – Daily Water Use via Telemetry

Table 3 - Daily Water Use (Farm 2)

Average daily water use over 30 days	First 30 days of project	Last 30 days to September 30 2015	Reduction
	24.6m ³	15.8m ³	8.8m ³ (-36%)

Table 4 - Estimated Annual Effluent Volume Reduction (Farm 2)

Water Savings	2640m ³
Stormwater Diversion	364m ³
Process Water Diversion	450m ³
TOTAL	3454m³

Funding

Until recently Council's contribution to the project was \$2100 and some staff time. The bulk of the costs were covered by an importer of water meters, a telemetry supplier and other service providers. The farm owners also contributed.

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ISSUE: MPI Presentation

ID: A788142

To: Environmental Management Committee, 27 October 2015

From: Nola Sooner, Committee Secretary

Date: 8 October 2015

Report Type:	<input type="checkbox"/> Normal operations	<input checked="" type="checkbox"/> Information	<input type="checkbox"/> Decision
Purpose:	<input type="checkbox"/> Infrastructure	<input type="checkbox"/> Public service	<input type="checkbox"/> Regulatory function
	<input type="checkbox"/> Legislative function	<input type="checkbox"/> Annual\Long Term Plan	<input checked="" type="checkbox"/> Other
Significance:	<input type="checkbox"/> Triggered	<input checked="" type="checkbox"/> Not Triggered	

Report

Ministry of Primary Industries wishes to address the Environmental Management Committee on Tuesday 27 October 2015 for 15 minutes on managing shellfish fisheries and investigating shellfish mortality events.

Legal compliance and significance assessment:

This report is for information only and no decisions are required.

Recommendation:

That the presentation from Ministry of Primary Industries be received.

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ISSUE: Agenda items for next EMC Meeting – 7 December 2015

ID: A790003

To: Environmental Management Committee, 27 October 2015

From: Nola Sooner, Committee Secretary

Date: 9 October 2015

Report Type:	<input type="checkbox"/> Normal operations	<input checked="" type="checkbox"/> Information	<input type="checkbox"/> Decision
Purpose:	<input type="checkbox"/> Infrastructure	<input type="checkbox"/> Public service	<input type="checkbox"/> Regulatory function
	<input type="checkbox"/> Legislative function	<input type="checkbox"/> Annual\Long Term Plan	<input checked="" type="checkbox"/> Other
Significance:	<input type="checkbox"/> Triggered	<input checked="" type="checkbox"/> Not Triggered	

Executive summary

The purpose of this report is to request committee members for agenda items for the next Environmental Management Committee meeting on 7 December 2015.

Legal compliance and significance assessment:

Councils are required to keep minutes of proceedings in accordance with the Local Government Act 2002.

Recommendation:

That the Environmental Management Committee members suggest agenda items for inclusion into the agenda for the next Environmental Management Committee meeting on 7 December 2015.
