WAIKATO REGIONAL COUNCIL PROPOSED WAIKATO REGIONAL PLAN CHANGE 1 WAIKATO AND WAIPA RIVER CATCHMENTS

Submission on a publically notified proposed Regional Plan prepared under the Resource Management Act 1991.

On: The Waikato Regional Councils proposed Waikato Regional Plan Change 1 - Waikato and Waipa River Catchments

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Lochiel Farmlands Ltd is not a trade competitor for the purpose of this submission but the proposed plan has a direct impact on Lochiel's ability to farm. If changes sought in the plan are adopted they may impact on others but Lochiel is not in direct trade competition with them.

I wish to be heard in support of this submission.

K. Robinson

Kim Phillip Robinson
CEO
Lochiel Farmlands Ltd
Date 1 March 2017

35.4 kgs of Koi carp were captured. The Opuatia Stream is 36.42 kms from the Allen & Eyre Road Bridge to the Waikato River which means there is 3.139 tonne of Koi carp in this part of the stream which in turn means the fish are sifting 44.646 tonne of silt per day *(see attached report Appendix I)*.

In my view Plan Change 1 sets out a restrictive regulatory approach regarding farming and lacks any solid analysis or costings, threatens farmers' property rights and misunderstands farming practicalities. It comes at a significant cost and the goodwill of the farming community that strives for environmental improvements over generations of farming. Lochiel registers its strong opposition to this approach. There is a real risk that it will not achieve the desired outcome of maintaining and improving the Waikato and Waipa River Catchments.

It is in landowners' best interests to look after the land. It is their passion, their livelihood, their asset and most of all the future of NZ. We are a rural based economy and we and the world will always need food. It is a shame that landowners were not consulted by the CSG (even though they claim they had farming experts in their group, clearly they have no idea of what landowners are actually doing on their properties).

In this submission I intend to show examples of what Lochiel has done to be environmentally sustainable to ensure that it has a sustainable business.

Lochiel has planted in excess of 8000 poles and trees, fenced off waterways and native bush areas and has developed three filter systems. **The poles are supplied by our neighbour who has developed a nursery on his farm; he has been supplying poles around the district for 15 years.** All in all over the past 15 years Lochiel has spent in excess of $1 million to enable us to continue farming with a lower environmental footprint and enhance our natural assets.

In 2006 Lochiel started testing the Maungatia Stream which starts and finishes within the farm boundaries. The nitrate levels are 0.9, and the phosphorous levels are 0.01; these levels haven't changed over a ten year period. E.coli tests is 84 parts per million; these levels are well within the world standards for drinking water. Hill country farmers are unable to run enough stock on the hills to pollute waterways. Most farmers in this area would only be carrying 9-11 stock units per hectare. This equals 1.2 cattle and 4.5 sheep per hectare. In respect of the investment we have made to our property and attention to detail we farm this property at a higher intensity than those in the district with no adverse effect on water quality as shown by our monitoring results as attached *(Appendix II)*.

Lochiel has developed four major water systems with reticulated water in most paddocks. The rivers and drains on the flats are all fenced off and a good deal of the banks have been planted with flaxes, Manuka trees and wetland grasses; this is an ongoing process.

Subject matter and provision in Plan Change 1:

3.11.5.3 and 3.11.5.4 Controlled Activity Rule – Farm Environment Plans

OPPOSE That landowners be required to employ a certified farm planner. Having to engage so-called professionals with no knowledge or history of the farm to develop a FEP he/she will simply collate the information given by the landowner and at an unnecessary cost. This may result in the information being misinterpreted or misrepresented and actions being recommended that don't take into account the particular characteristics of the farm. This may be detrimental to the environment in the medium to long term.

RELIEF SOUGHT Landowners can and do follow a Farm Environment Plan as demonstrated on a daily/seasonal basis. An example of this is that even in a good pasture growing season such as winter 2016, farmers (including ourselves) made destocking decisions based upon weight of cattle on the ground, rather than following a financial goal. This is but one small example of farmers utilising best practice day to day, something a farm consultant will struggle to put into a plan. Farmers do this so they have sustainable business, not because regulation dictates. However, a WRC template could be used by landowners as long as it can be filled in by themselves at no cost.

CONCLUDING STATEMENT

We as landowners have been poorly represented on the CSG. Agricultural representatives do not appear to have had any experience or expertise on what is happening on the land. They should have consulted landowners at the coal face.

Pest fish have been left out of the Plan Change 1 process and are a huge problem re sediment (as our Removal Exercise, Appendix 1, show).

The cost of fencing steep areas with no proven science that it will make any difference to the quality of waterways is unjustified (as our water tests, Appendix 2, show).

I, on behalf of landowners, feel extremely aggrieved at the lack of consultation with those at the coal face by Council before going down this impracticable and costly path.

So on questioning whether farmers were doing anything, the answer is 'YES', and would farmers do anything the answer is also 'YES'. The WRC should reconsider the whole Plan Change 1 with proper consultation and based on all the evidence brought to light.

Lochiel supports submissions presented by PLUG, Hill Country Farmers Group and Farmers for Positive Change.

Appendix 1

AQUANZ

FRESHWATER AQUATIC SOLUTIONS & SERVICES

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PROJECT BRIEF & RESULTS:

Project:	Koi Carp (Cyprinus carpio) Removal Exercise.
Dated:	10-11 February 2017
Location:	Opuatia Stream 400m Section of Lochiel Farmland 112 McCutchan Rd Glen Murray
Client:	Lochiel Farmlands 112 McCutchan Rd Glen Murray

OVERVIEW:

Aquaculture New Zealand Ltd (AQUANZ) under instruction from Kim Robinson of Lochiel Farmlands (112 McCutchan Rd, Glen Murray) undertook a fishing exercise to catch and destroy the pest fish known as Koi Carp (Cyprinus carpio) from a 406.90 (400) metre section of the Opuatia Stream within the farm boundary, as below:

GPS Location: 37°24'22.91"S 174°57'38.28"E Link: Click Here for Google Maps / Desktop Study

The purpose for this exercise set out to determine the current biomass and numbers of adult Koi Carp present in the Opuatia Stream in order for Lochiel Farmland to calculate the volume of river bed and bank being sifted and eroded by Koi carp. When feeding Koi stir up the bottom of waterways, muddying the water and destroying native plant and fish habitat. Koi carp are opportunistic omnivores, which means they eat a wide range of food, including insects, fish eggs, juvenile fish of other species and a diverse range of plants from what they can sift and dredge out.

AQUANZ applied a combination of fishing techniques and methods to cover the requirements this exercise. Primarily this included hand netting, sectional set netting, and electric fishing at 330v from a boat with generator rig. The set netting comprised of a divided 75mm rag mesh at both ends of the 400m stream section, with another 75mm rag mesh net set perpendicular to the western section. The use of the 75mm mesh was to allow for any native fish to pass through without ending up as bi-catch. The electric fishing activity in this steam was very successful. This was due to the width of the waterway and being able to coast down the 400m section with the river current. Every adult Koi carp seen during this exercise was caught, with approximately 10-15 juveniles (less than 10cm) able to pass through the nets.

RESULTS:

From the combination of setting nets, electric fishing and hand netting this exercise caught and destroyed 11 adult koi carp. A breakdown of these by fork-length sizing are as follows:

20-35cm : 2

35-50cm: 3

50-65cm: 2

65-80cm: 3

80+cm : 1

The total weight of these fish was: 35.4kg, meaning there was on average 2.75 adult koi with a combined weight of 8.85kg per 100m of Opuatia Stream (<10m wide). This data excludes the juveniles who were not caught due to allowing smaller native fish to pass the nets.

OBSERVATIONS:

During the electric fishing segment of the exercise the following species were observed.

Fish Species Present:

Common Name	Latin Name	Present (Y/N)	Level Present*			
			Abundant	Common	Sparse	Single Sighting
Brown Bullhead Catfish	*Ameiurus nebulosus*	Y		X		
Bullies	*Gobiomorphus spp.*	N				
Eel, Longfin	*Larus marinus*	Y		X		
Eel, Shortfin	*Cygnus atratus*	Y	X			
Goldfish	*Carassius auratus*	Y			X	X
Mosquitofish	*Gambusia affinis*	Y				X
Grey Mullet	*Mugil cephalus*	Y		X		
Yellow Eyed Mullet	*Aldrichetta forsteri*	Y		X		
Rudd	*Scardinius erythrophthalmus*	Y			X	
Tench	*Tinca tinca*	Y			X	X
Smelt	*Osmeridae*	Y		X		

*abundant represents 6 or more sightings of that particular species, with common representing 2-5 sightings and sparse representing 1-2 sightings of a particular species.

PHOTOGRAPHS & MEDIA


Koi carp caught in sediment trap dam.
We stopped counting at 50 carp.

APPENDIX 11

Water Quality Summary for the Mangatia Stream on Lochiel Farm

Abstract

Nitrate-N, *E. coli*, and Total Phosphorus are considered target contaminates in the Proposed Waikato Regional Council's Healthy Rivers Plan Change 1.

Lochiel Farms have a detailed 10-year water quality data set outlining these contaminants, from December 2006 to September 2016. The sheep and beef farm, of 3,524 ha, is located in Glen Murray and the Mangatia Stream runs through the farm.

This data set clearly shows that Nitrate-N and Dissolved Reactive Phosphate (DRP) contaminates have decreased in the Mangatia Stream, over the 10-year period that sampling has occurred. Lochiel no longer uses high analysis fertilisers, and has adopted good management practices since the 10-year sampling began. This is believed to be the reason behind the contaminate decrease.

Nitrate-N is addressed in Waikato Regional Council's Healthy Rivers Plan Change 1, but the Mangatia Stream is not directly stated in Plan Change 1. However, the Mangatia Stream flows into the Opuatia Stream, which is referenced in Plan Change 1. Nitrate-N concentration in the Mangatia Stream, is below the short term and 80-year water quality targets. No short term or long term targets have been set for Total Phosphorous for the Opuatia Stream in Proposed Plan Change 1.

E. coli concentrates in the Opuatia and Mangatia Streams' are unlikely to exceed the short-term water quality targets for the Opuatia Stream set by Plan Change 1. However, the sample concentrations and Plan Change 1 water quality targets are unable to be directly related due to different analysis methods; however, they can be compared.

Nitrate-N

Nitrate-N is derived from excess applications of inorganic fertilisers, wastewater treatment, and oxidation of nitrogenous waste product in human and animal excreta. Levels over 50mg/L are considered hazardous to humans, in particular infants (World Health Organization, 2011). The baseline in New Zealand's National Policy Statement for Freshwater Management (NPS-FM) 2014 for nitrate in a river is 6.9 mg/L, as an annual median. An A grade attribute state is considered in the NPS-FM 2014 as a "highly conservation value system. Unlikely to be effects even on sensitive species". This has an annual median of ≤ 1.0mg/L (New Zealand Government, 2014); this could be considered pristine.

As seen in Figure 1 below, all sites in the Mangatia Stream are decreasing over the 10-year sampling period, as shown by the trendlines. Over the last 10 years, the Mangatia Stream had an average nitrate level of 0.15 mg/L. The maximum annual median, over the 10-year sampling period is 0.572 mg/L (sample taken in August 2007), and the minimum annual median is < 0.002 mg/L (sample taken in March 2012). The short term and 80-year annual median nitrate water quality target for the Opuatia Stream is 0.74 mg/L (Waikato Regional Council, 2016).

One sample taken at the downstream site in August 2016 generated a single nitrate level of 0.96 mg/L (refer to Figure 1 below). This is considered an outlier in the data even though it is below 1.0 mg/L.

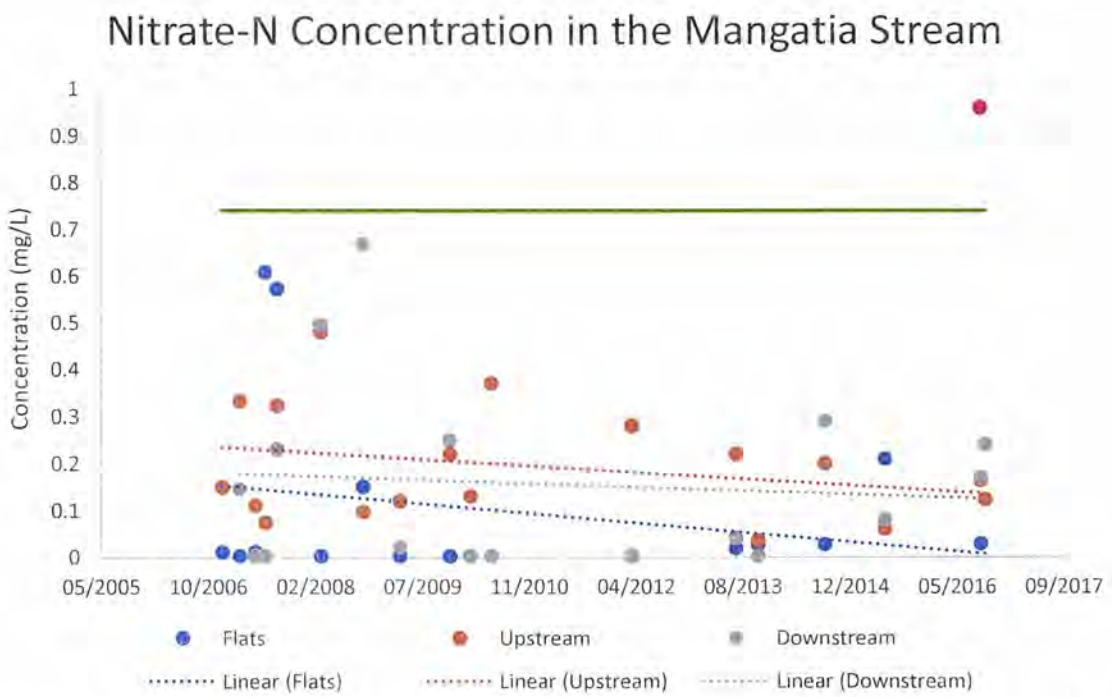

Figure 1 Nitrate-N concentrations (mg/L) in the Mangatia Stream, at three different sites over 10 years. The dashed line shows the trend over 10 years. The red dot is an outlier that has been

identified in the data, and therefore does not contribute to the trend. The green line is Plan Change 1's short-term and 80-year water quality target.

Dissolved Reactive Phosphorus (DRP)

DRP is the concentration of phosphorus that is readily available for plant and algae growth, therefore providing an indication on potential growth levels in a waterbody (LAWA, 2013). In Plan Change 1, the water quality targets are associated with Total Phosphorus (TP) (Waikato Regional Council, 2016). TP is the measure of all types of phosphorus present in the waterbody - DRP and phosphorus bound to sediment. Therefore, TP measures the actual and potential levels of phosphorus available for plant and algae growth (LAWA, 2013).

Currently in Plan Change 1, the Opuatia Stream has no phosphorus targets for either the short term or 80-year period (Waikato Regional Council, 2016).

Figure 2 below, demonstrates that all sampling sites show decreasing contaminant levels over the 10-year sampling period.

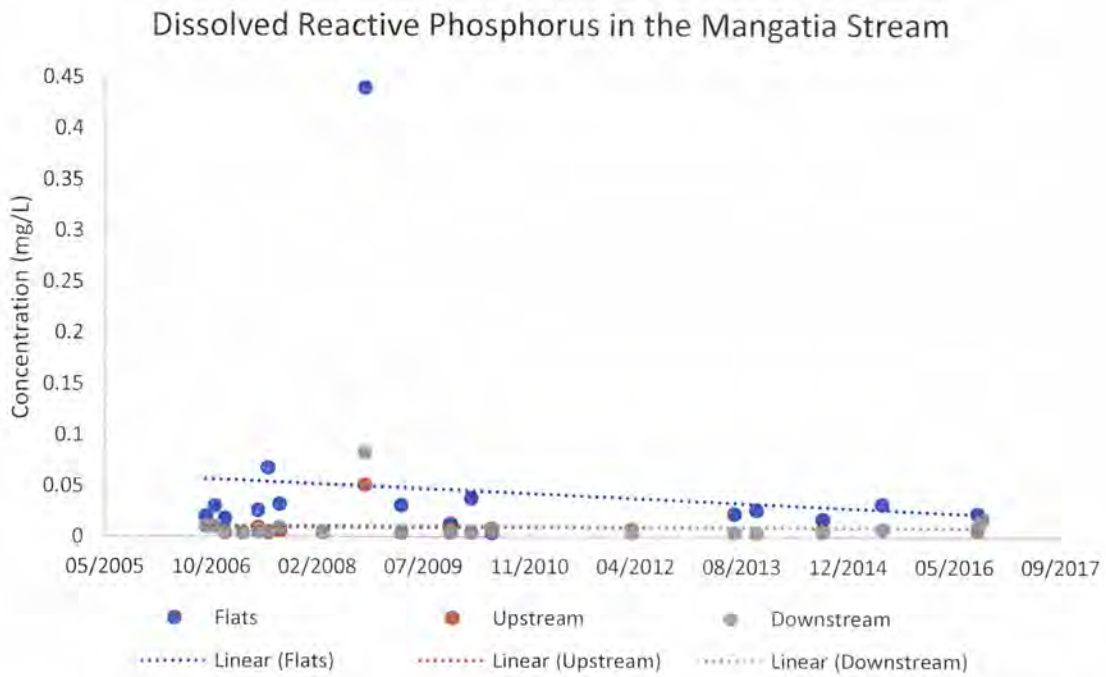

Figure 2 Dissolved Reactive Phosphorus concentrations (mg/L) in the Mangatia Stream, at three different sites over 10 years. The dashed line shows the trend over the 10 years.

E. coli

Figure 3 below clearly demonstrates that *E. coli* concentrations in the Opuatia and Mangatia Streams' are highly unlikely to exceed the short-term water quality targets for the Opuatia Stream set out in Plan Change 1.

These water quality targets are set for the 95th percentile of *E. coli* in the Opuatia Stream, which are 2,898 *E. coli*/100mL for the short-term, and 540 *E. coli*/100mL for the 80-year target.

The maximum reading derived from the two samples, taken in the Mangatia and Opuatia Stream, was 411 MPN/100mL in the Opuatia Stream. In addition, the samples were taken in winter, which can be expected to be a high concentration reading. Therefore, theoretically Lochiel farm should not produce *E. coli* levels typically exceeding the maximum reading obtained (411 MPN/100mL in August 2016).

A trend for *E. coli* in the Mangatia or Opuatia Stream is unable to be generated due to the limited set of data available.

Most Probable Number (MPN) is a "statistical count based on the total number of positive tubes compared to the total number of tubes inoculated" as stated by Hills Laboratories (2013). Therefore, the samples analysed are unable to be directly related to the water quality targets in Plan Change 1 because the methods are different; however, they can be compared.

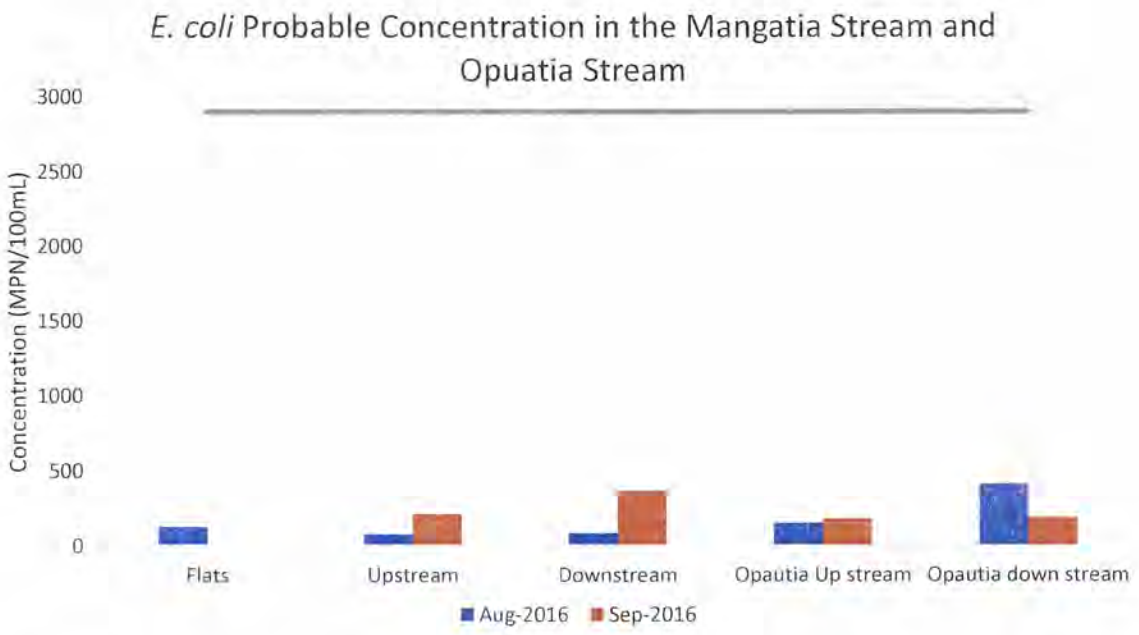

Figure 3 E. coli concentrations (MPN/100mL) at three different sites in the Mangatia Stream, and two different sites in the Opuatia Stream, in August and September 2016. The grey line represents Plan Change 1's short term water quality target for the *E. coli* at the 95th percentile (*E. coli*/100mL).

References

Hills Laboratories. (2013, February 28). *Water Testing for Drinking, Stock, Irrigation and Effluents.* Retrieved from Hills Laboratories: http://www.hill-laboratories.com/file/fileid/48410

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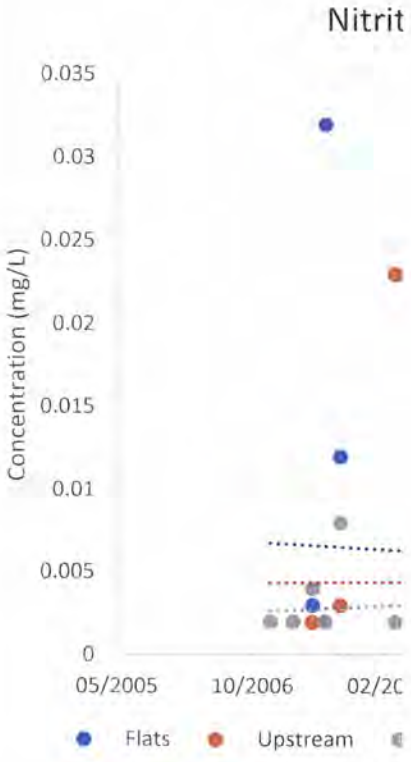
New Zealand Government. (2014). *National Policy Statement for Freshwater Management 2014.* Ministry for the Environment.

Saskatchewan Ministry of Health. (2008). *Nitrite.* Government of Saskatchewan, Ministry of Health. SaskH2.

Waikato Regional Council. (2016). *Proposed Waikato Regional Plan Chage 1 - Waikato and Waipa River Catchments.* Waikato Regional Council.

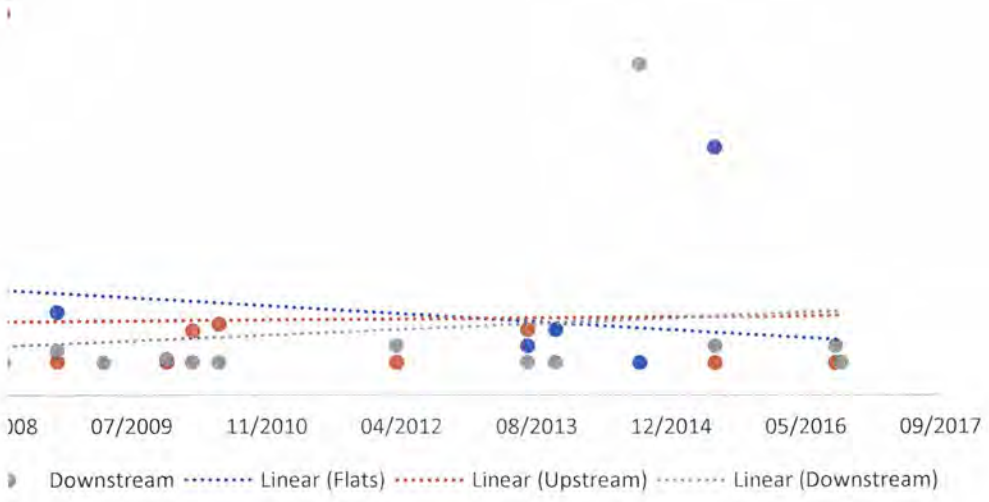
World Health Organization. (2011). *Nitrate and nitrite in drinking-water.* Geneva: World Health Organization.

Date Received		Date Reported	Flats	Upstream	Downstream
14/09/2016	Sep-2016	19/09/2016		0.002	0.002
23/08/2016	Aug-2016	29/08/2016	0.002	0.002	0.003
4/06/2015	Jun-2015	8/06/2015	0.015	0.002	0.003
26/08/2014	Spe-2014	1/09/2014	0.002	0.02	0.02
14/10/2013	Oct-2013	24/10/2013	0.004	0.002	0.002
9/07/2013	Jul-2013	12/07/2013	0.003	0.004	0.002
1/03/2012	Mar-2012	13/03/2012	0.002	0.002	0.003
18/05/2010	May-2010	25/05/2010	0.002	0.0043	0.002
10/02/2010	Feb-2010	16/02/2010	0.002	0.0039	0.002
4/11/2009	Nov-2009	12/11/2009	0.002	0.002	0.0022
13/03/2009	Mar-2009	24/03/2009	0.002	0.002	0.002
19/09/2008	Oct-2008	2/10/2008	0.005	0.002	0.0027
7/03/2008	Mar-2008	19/03/2008	0.002	0.023	0.002
22/08/2007	Aug-2007	29/08/2007	0.012	0.003	0.008
27/06/2007	Jul-2007	5/07/2007	0.032	0.002	0.002
10/05/2007	May-2007	18/05/2007	0.003	0.002	0.004
28/02/2007	Mar-2007	7/03/2007	0.002	0.002	0.002
8/12/2006	Dec-2006	14/12/2006	0.002	0.002	0.002
13/10/2006	Oct-2006	27/10/2006			
29/08/2006	Sep-2006	14/09/2006			
11/07/2006	Jul-2006	19/07/2006			



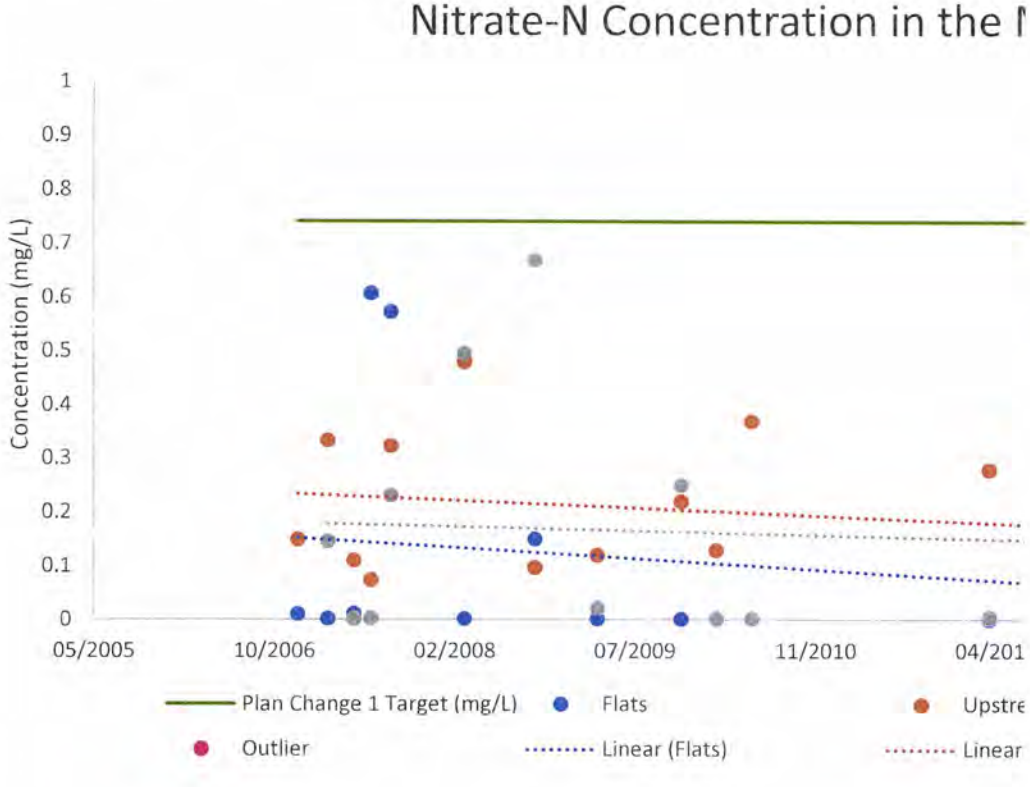
Opautia Up stream	Opautia down stream	Lochiel Farm upstream	Lochiel Farm downstream
	Nitrite - N (mg/L)		
0.002	0.002		
0.002	0.002		
0.004	0.004		

:e-N Concentration in the Mangatia Stream

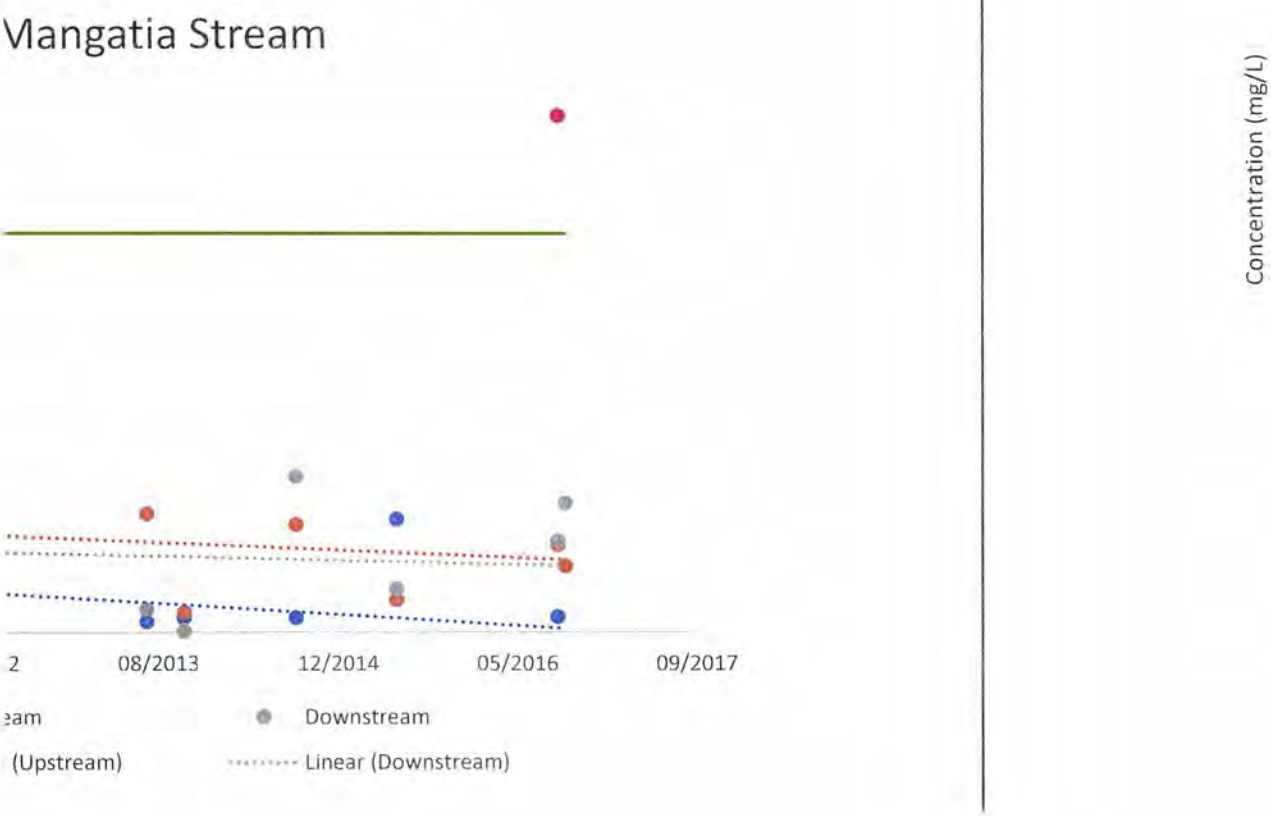


Flats	Upstream	Downstream	Annual Median	PC1 target	Opautia Up stream Nitrate - N (mg/L
	0.124	0.146	0.135	0.74	0.79
0.029	0.164	0.96	0.164	0.74	1.03
0.21	0.061	0.24	0.21	0.74	
0.027	0.2	0.17	0.17	0.74	
0.027	0.036	0.081	0.036	0.74	0.58
0.019	0.22	0.29	0.22	0.74	
0.002	0.28	0.002	0.002	0.74	
0.002	0.37	0.042	0.042	0.74	
0.002	0.13	0.0046	0.0046	0.74	
0.002	0.22	0.0026	0.0026	0.74	
0.002	0.12	0.0028	0.0028	0.74	
0.15	0.097	0.25	0.15	0.74	
0.002	0.48	0.022	0.022	0.74	
0.572	0.323	0.668	0.572	0.74	
0.607	0.074	0.496	0.496	0.74	
0.011	0.11	0.231	0.11	0.74	
0.002	0.333	0.003	0.003	0.74	
0.01	0.149	0.002	0.01	0.74	
0.1	0.1	0.1	0.1		
0.2	0.2	0.6	0.2		
	0.2	0.4	0.3		
0.099	0.194	0.156			
0.150					

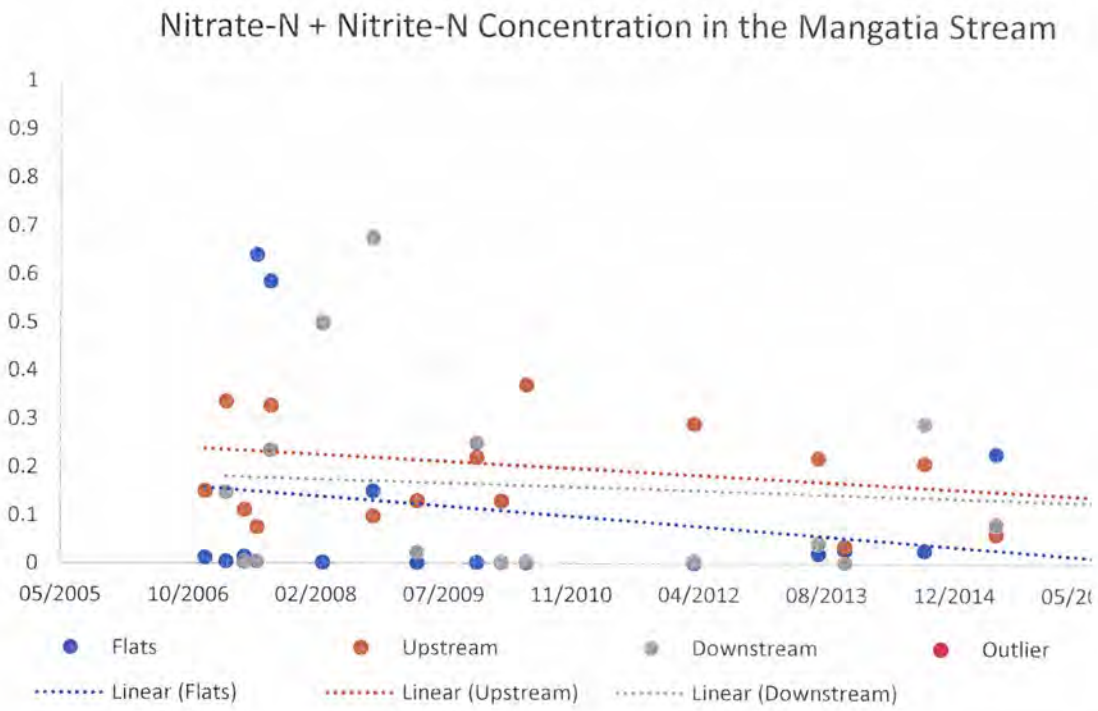
MAX	0.572
MIN	0.002



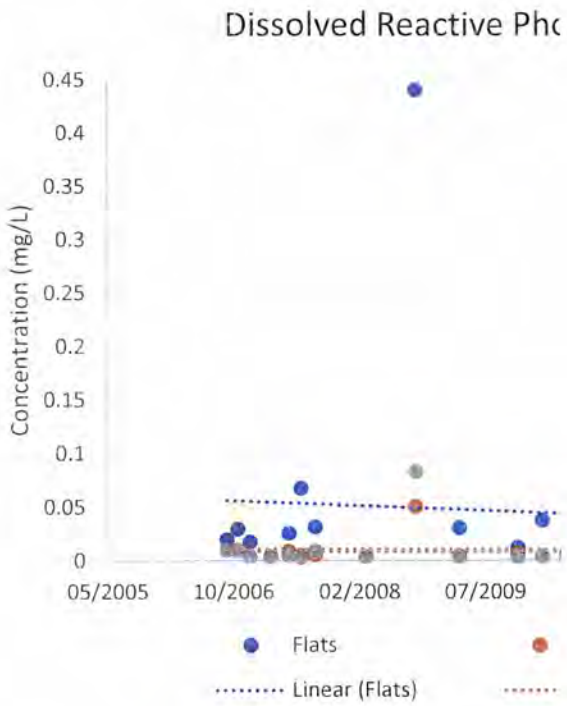
Opautia down stream)	Lochiel Farm upstream	Lochiel Farm downstream	Flats	Upstream
	0.75			0.126
	0.192		0.031	0.166
			0.23	0.063
			0.029	0.21
	0.38		0.03	0.037
			0.022	0.22
			0.002	0.29
			0.002	0.37
			0.002	0.13
			0.0029	0.22
			0.002	0.13
			0.15	0.098
			0.002	0.5
			0.584	0.326
			0.639	0.075
			0.014	0.111
			0.004	0.335
			0.012	0.15



Downstream	Opautia Up stream	Opautia down stream	Lochiel Farm upstream
		Nitrate-N + Nitrite-N	
0.148	0.79	0.75	
0.96	1.04	0.194	
0.24			
0.18			
0.083	0.58	0.39	
0.29			
0.003			
0.043			
0.006			
0.0047			
0.0036			
0.25			
0.023			
0.676			
0.498			
0.235			
0.004			
0.003			

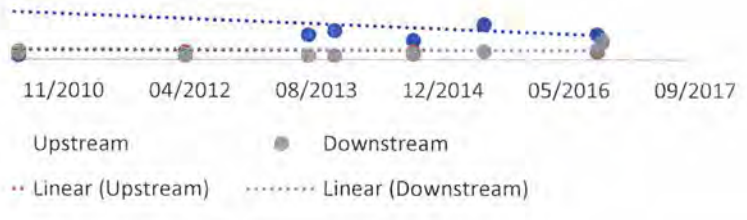


Lochiel Farm downstream	Flats	Upstream	Downstream	Opautia Up stream
				Diss
		0.017	0.018	0.006
	0.024	0.008	0.01	0.004
	0.033	0.008	0.008	
	0.018	0.007	0.005	
	0.027	0.004	0.004	0.005
	0.023	0.004	0.004	
	0.004	0.007	0.004	
	0.004	0.0076	0.0061	
	0.038	0.004	0.004	
	0.013	0.0072	0.004	
	0.031	0.0048	0.004	
	0.44	0.051	0.083	
	0.004	0.004	0.004	
	0.032	0.006	0.009	
	0.068	0.004	0.005	
	0.026	0.009	0.005	
	0.004	0.004	0.004	
	0.018	0.004	0.004	
	0.03	0.01	0.01	
	0.02	0.01	0.01	
		0.01	0.01	



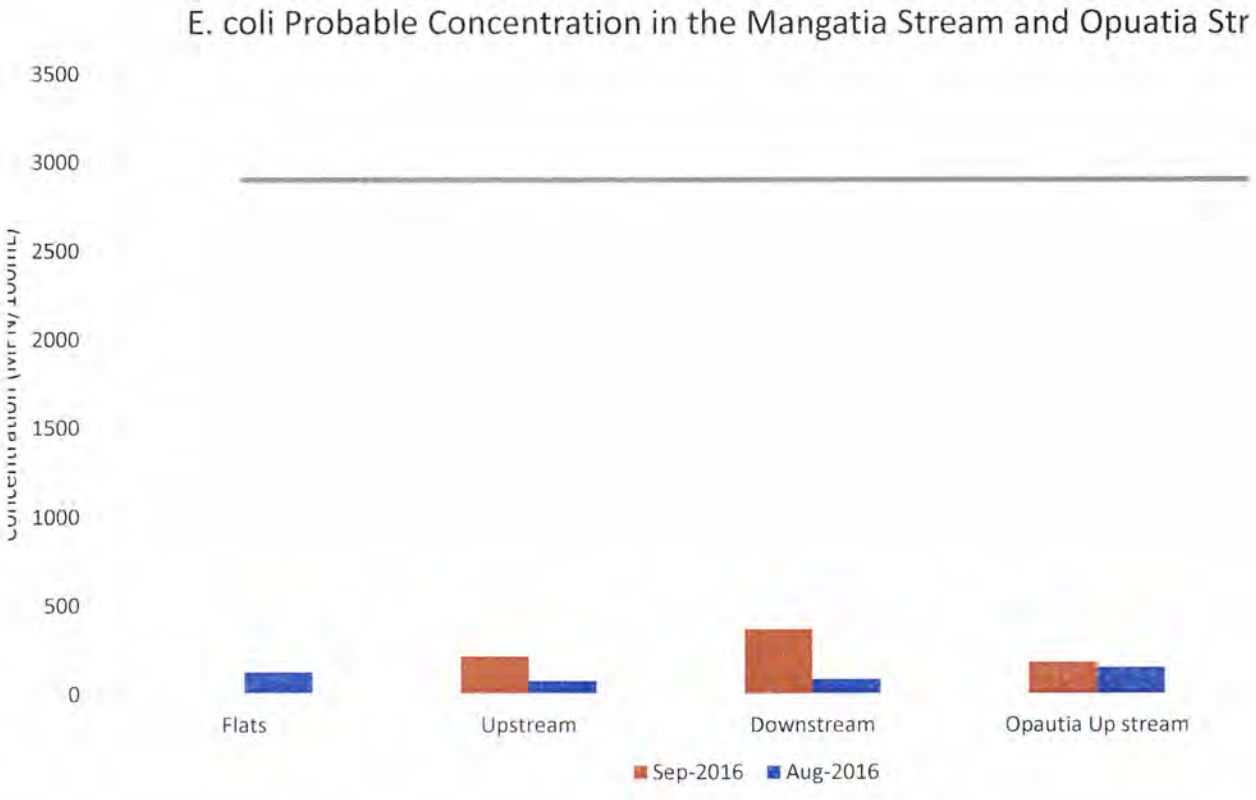
Opautia down stream	Lochiel Farm upstream	Lochiel Farm downstream	Flats
olved Reactive Phosphorus			
	0.006		
	0.004		122
			2898
	0.007		

osphorus in the Mangatia Stream



Concentration (MPN/100ml)

Upstream	Downstream	Opautia Up stream	Opautia down stream	Lochiel Farm upstream
		E.Coli		
210	365	179	186	
74	84	150	411	
2898	2898	2898	2898	



Lochiel Farm downstream	Flats	Upstream	Downstream	Opautia Up stream
	1.4	0.16	0.26	

eam

Opautia down stream

Opautia down stream Phosphate	Lochiel Farm upstream	Lochiel Farm downstream