

# Welcome



Regional plans review workshop

Water quality

15 October 2014

# Welcome, introductions and housekeeping

- Welcome
- NRC introductions
- Toilets and fire
- Attendance register
- Participant introductions



# Why do a review?

- Plans are old
- Based on old information
- We have to
- Learnt a lot
- New government policy



# Outline of the day

9:45 – 11:00	Issues with the state of Northland's water quality
11:00 – 11:15	Morning tea
11:15 – 1:00	Issues with the management of Northland's water quality
1:00 – 1:30	Lunch
1:30 – 3:00	Options for addressing the issues
3:00 – 3:15	Afternoon tea
3:15 – 4:15	Options for addressing the issues - continued
4:15 – 4:30	Wrap up, next steps & evaluations

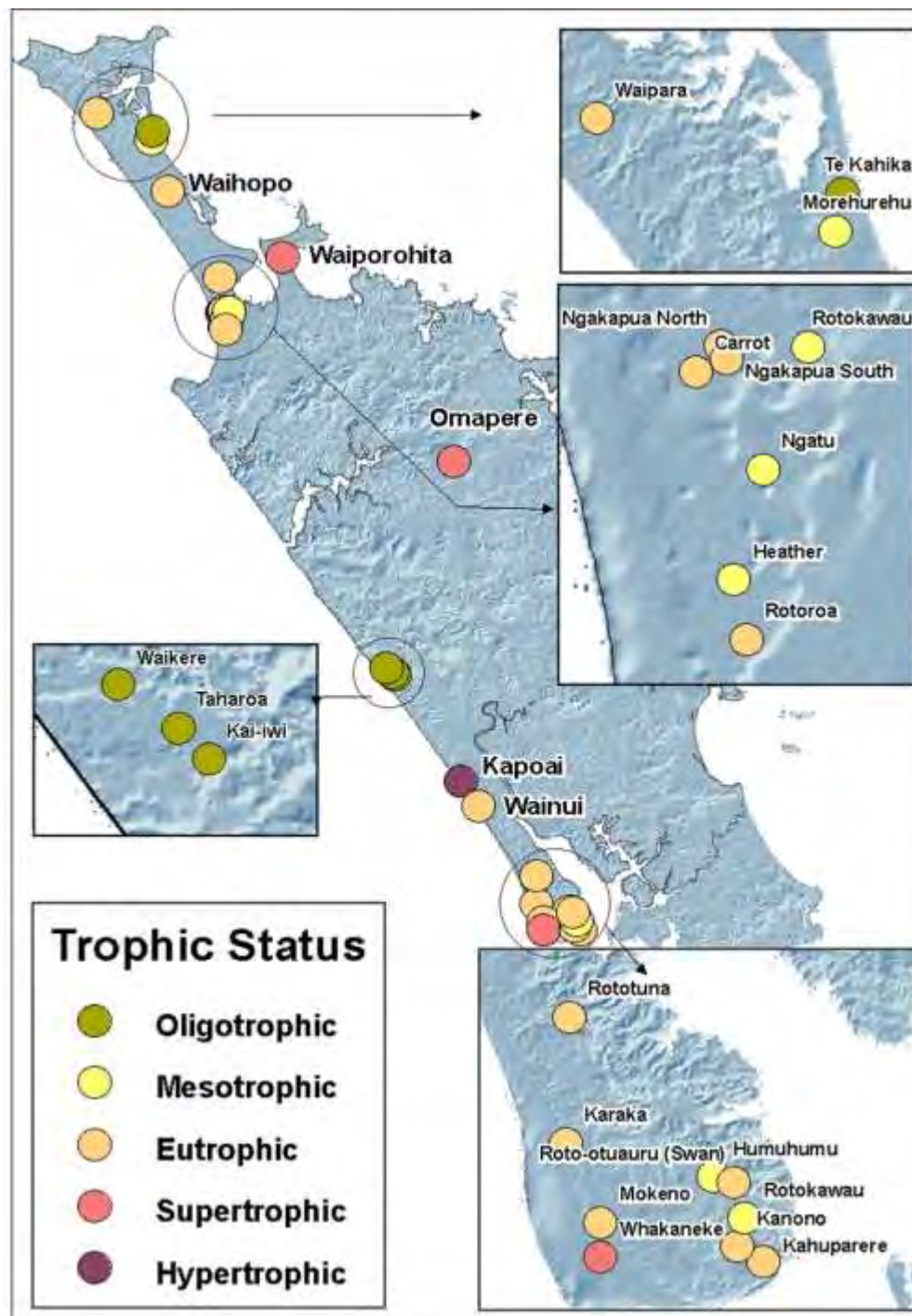
# Key terms

- Attributes
- Water quality objectives
- Water quality limits
- Water management units
- Over-allocation

# Significant issues with Northland's water quality





- Elevated levels of nutrients in the majority of lakes and in some rivers
- Poor water clarity in many lowland rivers
- High sediment accumulation rates in a number of estuaries and harbours
- Elevated levels of faecal microbes in the majority of rivers and some inner estuarine areas





# Comparison of Lake Water Quality Monitoring Network data (2009-2013) with the compulsory attribute states in the National Policy Statement for Freshwater Management

Value		Ecosystem Health					Human Health (Secondary Contact Recreation)		
Attribute		Phytoplankton (mg chl-a/m <sup>3</sup> )		Total Nitrogen (mg/m <sup>3</sup> )	Total Phosphorous (mg/m <sup>3</sup> )	Ammonia Toxicity (mg NH <sub>4</sub> - N/L)		Cyanobacteria (cells/mL)	E.coli/100 mL**
Compliance Statistic		Annual Median	Annual Maximum	Annual Median	Annual Median	Annual Median	Annual Maximum	80 <sup>th</sup> Percentile	Annual Median
Aupouri lakes	Carrot*	8.4	14.4	545	21.0	0.012	0.040	No Data	No Data
	Heather*	4.4	5.8	308	10.5	0.003	0.004	No Data	No Data
	Morehurehu*	2.1	3.1	518	12.5	0.018	0.036	No Data	No Data
	Ngakapua North*	5.0	9.0	496	14.0	0.008	0.037	No Data	No Data
	Ngakapua South	6.5	9.7	553	16.0	0.007	0.014	No Data	No Data
	Ngatu*	3.3	6.7	806	9.5	0.080	0.144	No Data	No Data
	Rotokawau	4.3	6.6	583	13.0	0.018	0.006	No Data	No Data
	Rotoroa*	6.7	10.2	832	14.0	0.011	0.084	No Data	No Data
	Te Kahika*	1.0	1.9	329	3.5	0.036	0.052	No Data	No Data
	Waihopo*	3.4	6.9	590	15.5	0.012	0.023	No Data	No Data
	Waipara*	2.9	9.8	465	13.0	0.007	0.011	No Data	No Data
Waiparera	11.9	21.1	793	25.0	0.007	0.015	No Data	No Data	
Karikari/ Central lakes	Omapere (east)	3.8	6.0	515	43.0	0.012	0.027	No Data	No Data
	Omapere (west)	3.4	9.8	480	52.0	0.011	0.014	No Data	No Data
	Waiporohita	18.4	30.0	827	35.5	0.006	0.009	No Data	No Data
Kai iwi lakes	Kai Iwi*	1.8	3.2	351	6.5	0.005	0.007	No Data	No Data
	Taharoa*	1.0	1.5	130	2.0	0.002	0.002	No Data	No Data
	Waikare*	1.9	2.9	204	4.0	0.002	0.003	No Data	No Data
Pouto lakes	Humuhumu*	3.8	6.7	305	9.5	0.004	0.004	No Data	No Data
	Kahuparere*	8.5	15.1	400	14.5	0.002	0.014	No Data	No Data
	Kanono*	7.1	9.9	337	18.5	0.002	0.009	No Data	No Data
	Karaka	18.1	110.0	494	33.0	0.015	0.169	No Data	No Data
	Mokeno	4.2	13.6	1012	39.5	0.034	0.169	No Data	No Data
	Rotokawau*	2.0	3.7	337	8.0	0.006	0.053	No Data	No Data
	Rototuna	20.3	57.9	771	32.0	0.005	0.011	No Data	No Data
	Swan	21.4	24.4	912	57.0	0.009	0.024	No Data	No Data
Wainui*	3.6	15.4	417	16.0	0.007	0.014	No Data	No Data	

	"A" attribute state
	"B" attribute state
	"C" attribute state
	"D" attribute state (exceeds "National Bottom Line")



Lake Swan



Lake Mokeno

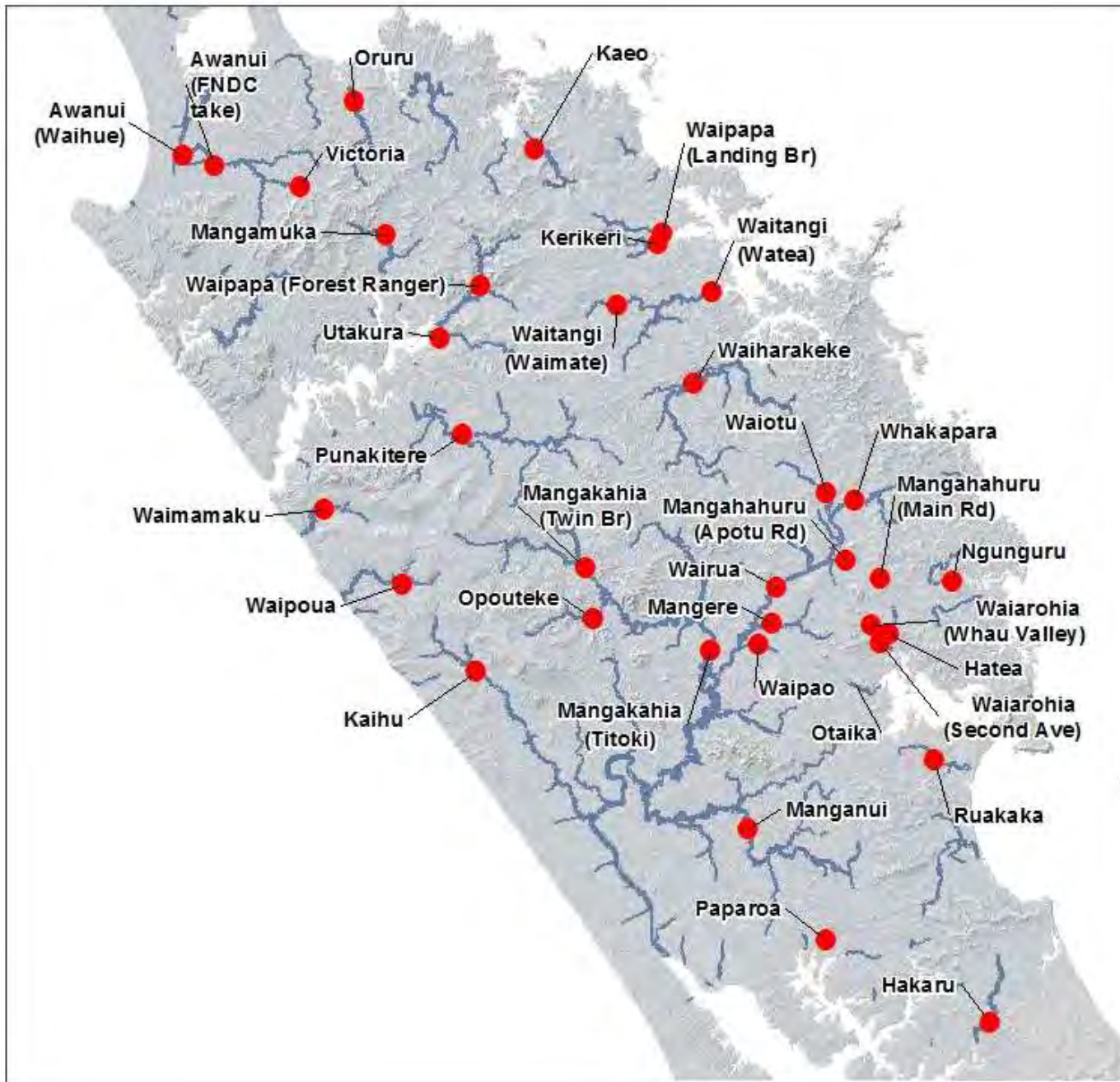


The image is a high-contrast, overexposed photograph. The background is a bright, almost white yellow, suggesting a very bright sky or a large body of water reflecting the sun. In the foreground, there is a large, dark, rounded shape that appears to be a hill or a large rock. The overall image is very blurry and lacks fine detail due to the extreme lighting.

**Lake Karaka**



# 36 River Water Quality Monitoring Network sites

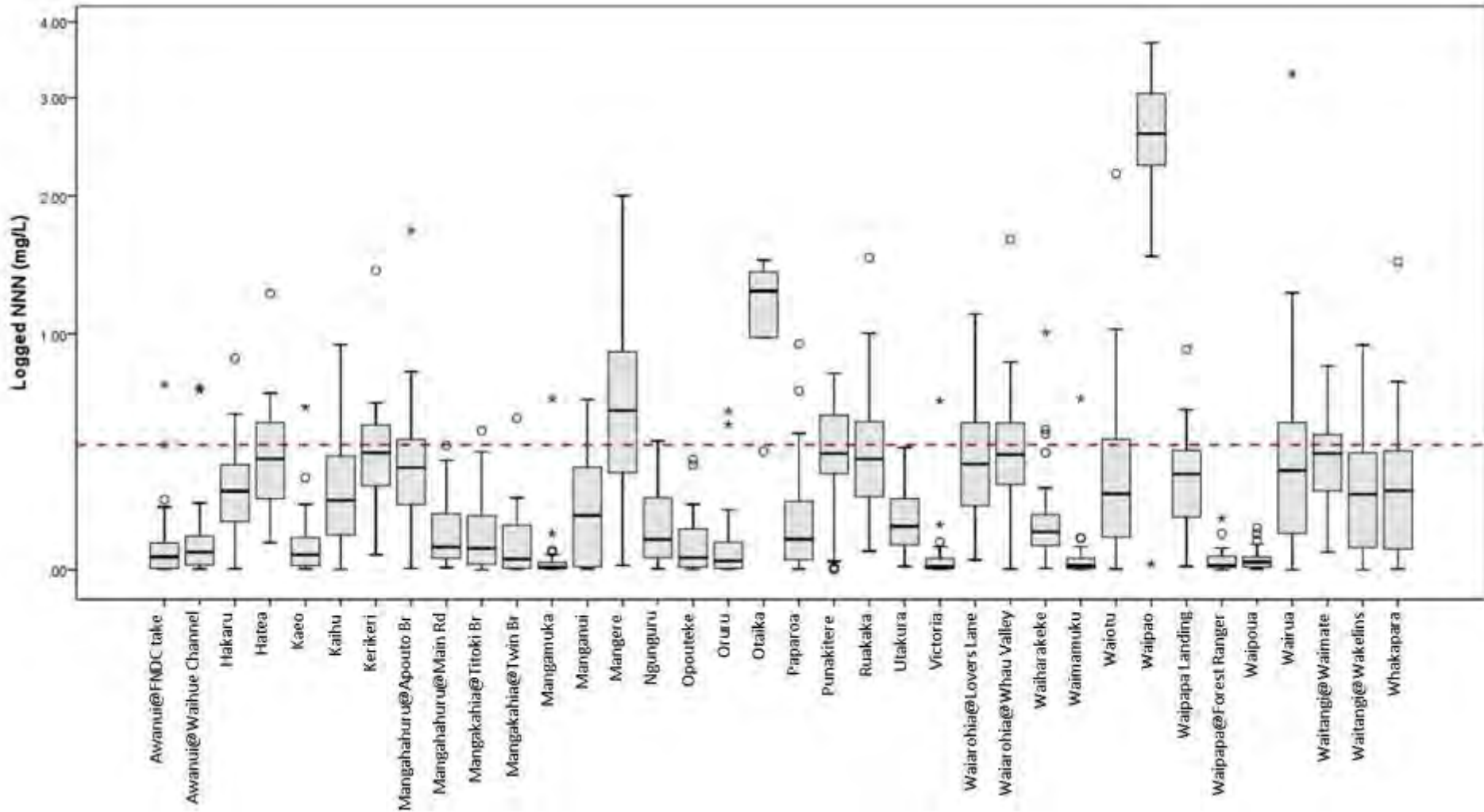


# Comparison of River Water Quality Monitoring Network data (2009-2013) with the compulsory attributes in the National Policy Statement for Freshwater Management.

Value	Ecosystem Health					Human Health (Secondary contact recreation)			
	Compulsory Attribute	Periphyton (mg chl-a/m <sup>2</sup> )	Ammonia Toxicity (mg NH <sub>3</sub> -N/L)		Nitrate Toxicity (NO <sub>3</sub> -N/L)		Dissolved Oxygen (mg/L)		Cyanobacteria (cells/L)
Compliance Statistic	Annual Maximum*	Annual Median	Annual Maximum.	Annual Median	Annual 95 <sup>th</sup> Percentile	7-day mean min (1 Nov to 30 Apr)	1-day min (1 Nov to 30 Apr)	80 <sup>th</sup> Percentile	Annual Median
Awanui @ FNDC watertake	90	0.010	0.042	0.035	0.210	No Data	6.64	No Data	276
Awanui @ Waihoe Channel	No Data	0.042	0.230	0.061	0.308	No Data	5.60	No Data	255
Hakaru @ Topuni Creek Farm	492	0.015	0.067	0.238	0.409	No Data	7.28	No Data	249
Hatea u/s Mair Park Bridge	57	0.014	0.054	0.351	0.559	No Data	7.90	No Data	309
Kaeo @ Dip Road	No Data	0.009	0.028	0.043	0.287	No Data	7.46	No Data	757
Kaihu @ gorge	60	0.008	0.036	0.277	0.598	No Data	7.48	No Data	177
Kerikeri @ Stone Store bridge	22	0.011	0.053	0.383	0.590	No Data	7.60	No Data	272
Mangahuru @ Apotu Road	No Data	0.018	0.081	0.299	0.515	No Data	6.02	No Data	535
Mangahuru @ Main Road	9	0.009	0.047	0.124	0.211	No Data	7.38	No Data	316
Mangakahia @ Titoki Bridge	No Data	0.011	0.035	0.081	0.240	No Data	8.06	No Data	223
Mangakahia @ Twin Bridges	172	0.007	0.022	0.074	0.199	No Data	8.54	No Data	146
Mangamuka @ Iwiatua Road	13	0.006	0.013	0.006	0.063	No Data	7.88	No Data	351
Manganui @ Mitaitai Road	No Data	0.015	0.080	0.185	0.497	No Data	5.42	No Data	148
Mangere @ Knight Road	No Data	0.028	0.155	0.480	0.895	No Data	5.06	No Data	523
Ngunguru @ Coalhill Lane	No Data	0.014	0.022	0.126	0.265	No Data	8.20	No Data	423
Opouteke @ suspension bridge	150	0.006	0.030	0.060	0.186	No Data	8.32	No Data	172
Oruru @ Oruru Road	No Data	0.008	0.032	0.011	0.222	No Data	5.48	No Data	249
Otaika @ Otaika Valley Road	5	0.020	0.232	1.187	1.613	No Data	7.13	No Data	607
Paparua @ walking bridge	No Data	0.019	0.272	0.123	0.399	No Data	4.50	No Data	508
Punakitere @ Taheke Recorder	41	0.011	0.051	0.392	0.573	No Data	8.18	No Data	424
Ruakaka @ Flyger Road	55	0.034	0.142	0.338	0.642	No Data	5.38	No Data	705
Utakura @ Okaka Road Bridge	No Data	0.014	0.033	0.107	0.222	No Data	6.44	No Data	310
Victoria @ Thompsons Bridge	49	0.006	0.018	0.007	0.087	No Data	7.38	No Data	153
Waiarohia @ Whau Valley	47	0.010	0.058	0.342	0.552	No Data	7.06	No Data	474
Waiarohia @ Lovers Lane	43	0.009	0.042	0.331	0.552	No Data	6.66	No Data	460
Waiharakeke @ Stringers Road	79	0.016	0.124	0.105	0.246	No Data	6.32	No Data	379
Waimamaku @ SH12	No Data	0.007	0.022	0.004	0.094	No Data	7.86	No Data	382
Waiotu @ SH1	No Data	0.019	0.116	0.285	0.606	No Data	6.48	No Data	460
Waipao @ Draffin Road	3	0.008	0.122	2.683	3.065	No Data	7.64	No Data	604
Waipapa @ Forest Ranger	17	0.003	0.008	0.015	0.083	No Data	8.30	No Data	58
Waipapa @ Waipapa Landing	48	0.011	0.026	0.262	0.434	No Data	6.97	No Data	189
Waipoua @ SH12 Rest Area	6	0.006	0.014	0.020	0.060	No Data	8.74	No Data	88
Wairua @ Purua	No Data	0.017	0.115	0.403	0.631	No Data	6.90	No Data	99
Waitangi @ Watea	No Data	0.009	0.039	0.277	0.506	No Data	8.36	No Data	175
Waitangi @ Waimate Road	72	0.011	0.032	0.355	0.471	No Data	7.40	No Data	450
Whakapara @ cableway	No Data	0.009	0.077	0.273	0.571	No Data	6.86	No Data	258

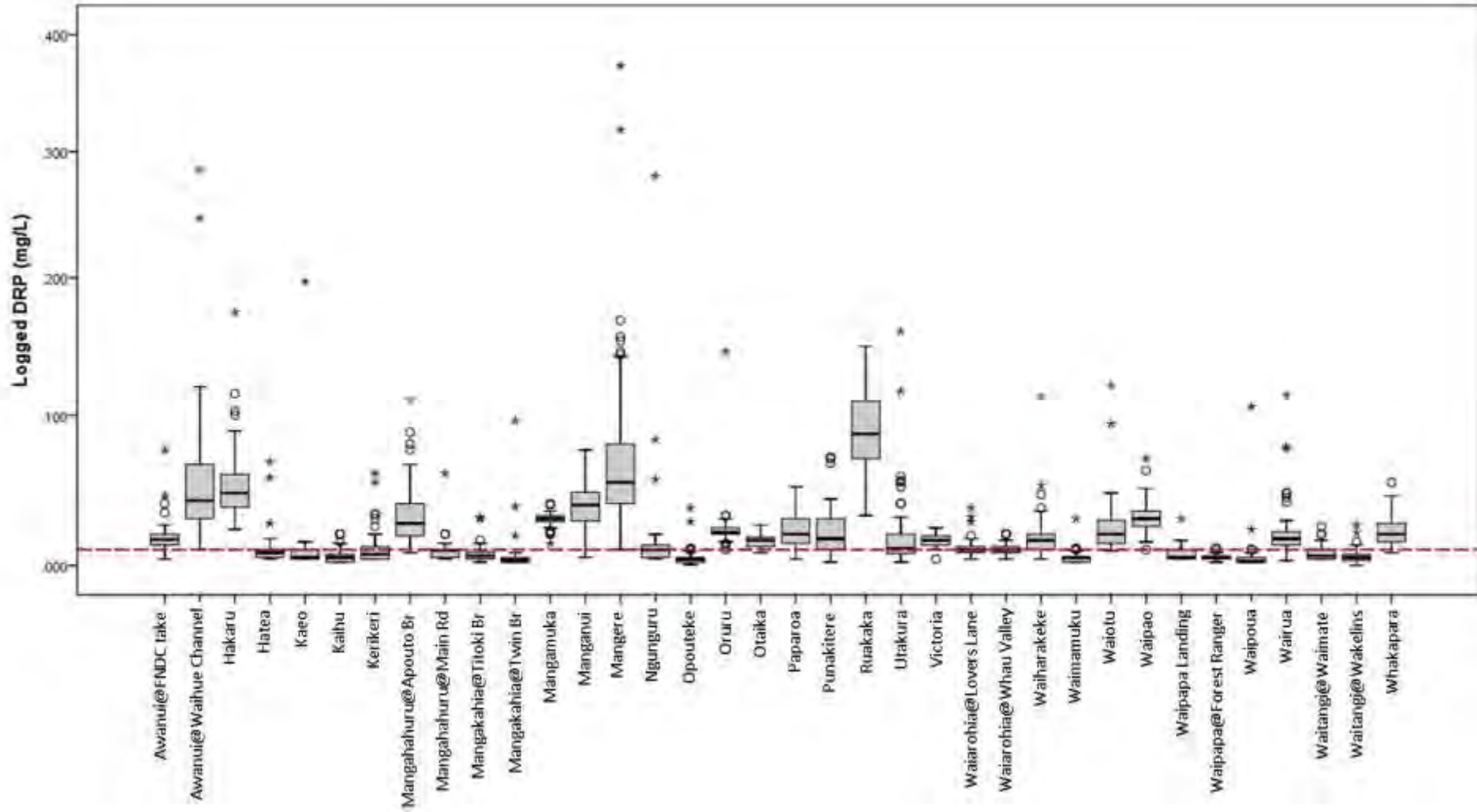
"A" attribute state  
 "B" attribute state  
 "C" attribute state  
 "D" attribute state (exceeds "National Bottom Line")

Nitrite-nitrite nitrogen (NNN) levels recorded across all 36 RWQMN sites from 2007 to 2011. The dashed red line represents the ANZECC 2000 low risk trigger value for NNN (<0.444 mg/L)





Dissolved Reactive Phosphorus (DRP) levels recorded across all 36 RWQMN sites from 2007 to 2011. The dashed red line represents the ANZECC 2000 low-risk trigger value for DRP (<0.01 mg/L)

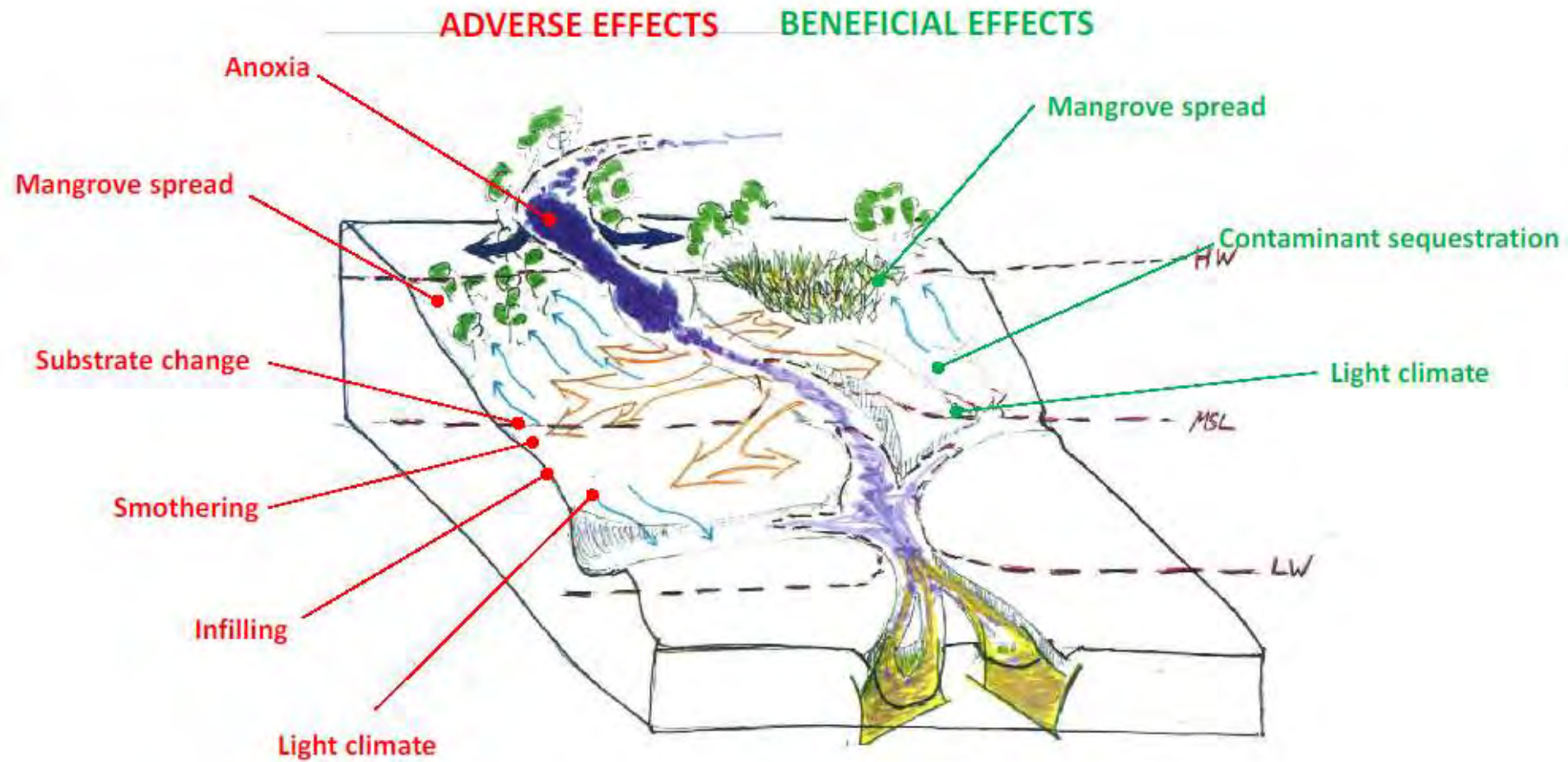




Manganui River

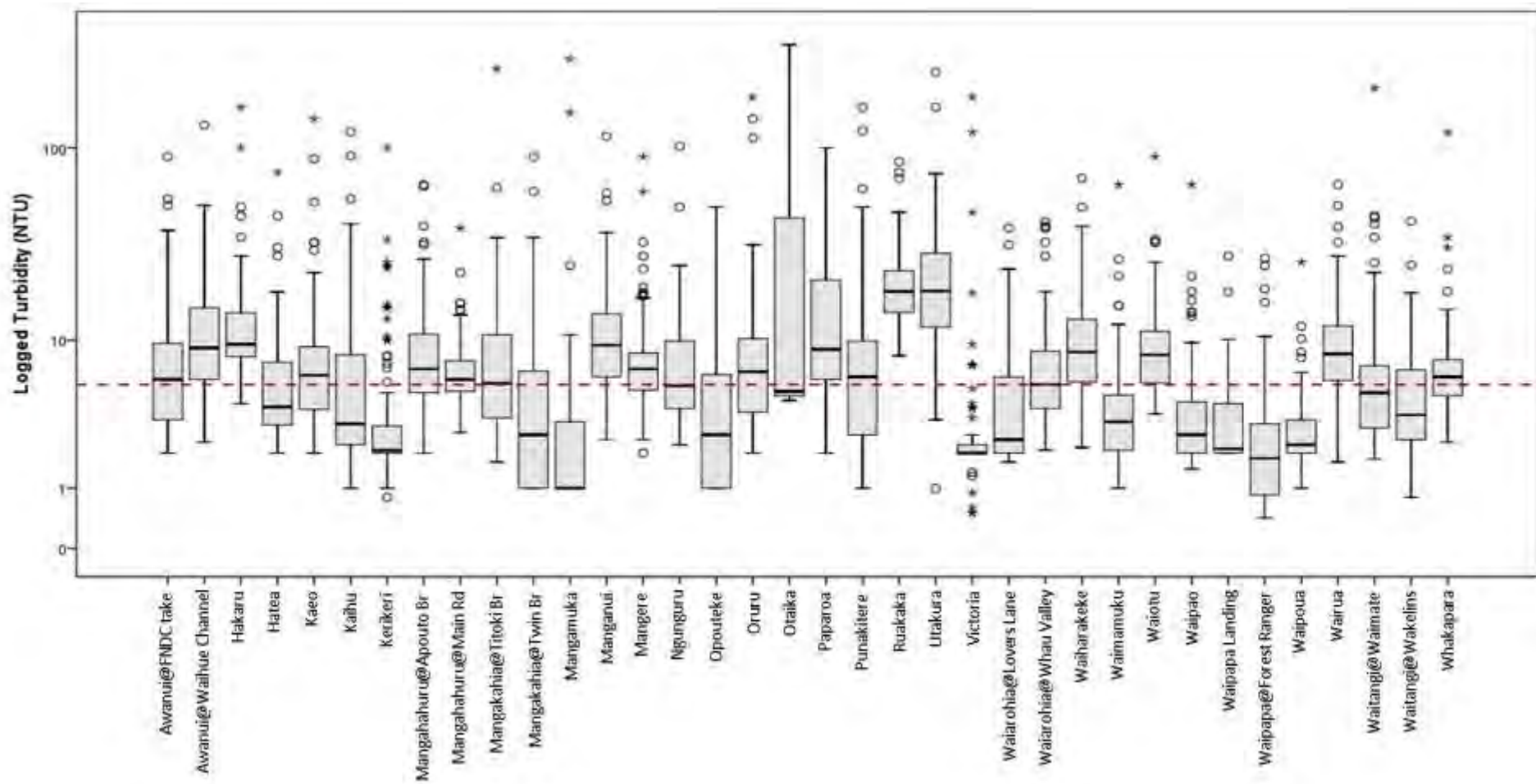


# Fine sediment



Source: Dr Malcolm Green,  
NIWA

Turbidity levels recorded across all 36 RWQMN sites from 2007 to 2011. The dashed red line represents the ANZECC 2000 low-risk trigger value for turbidity in lowland rivers (5.6 NTU)



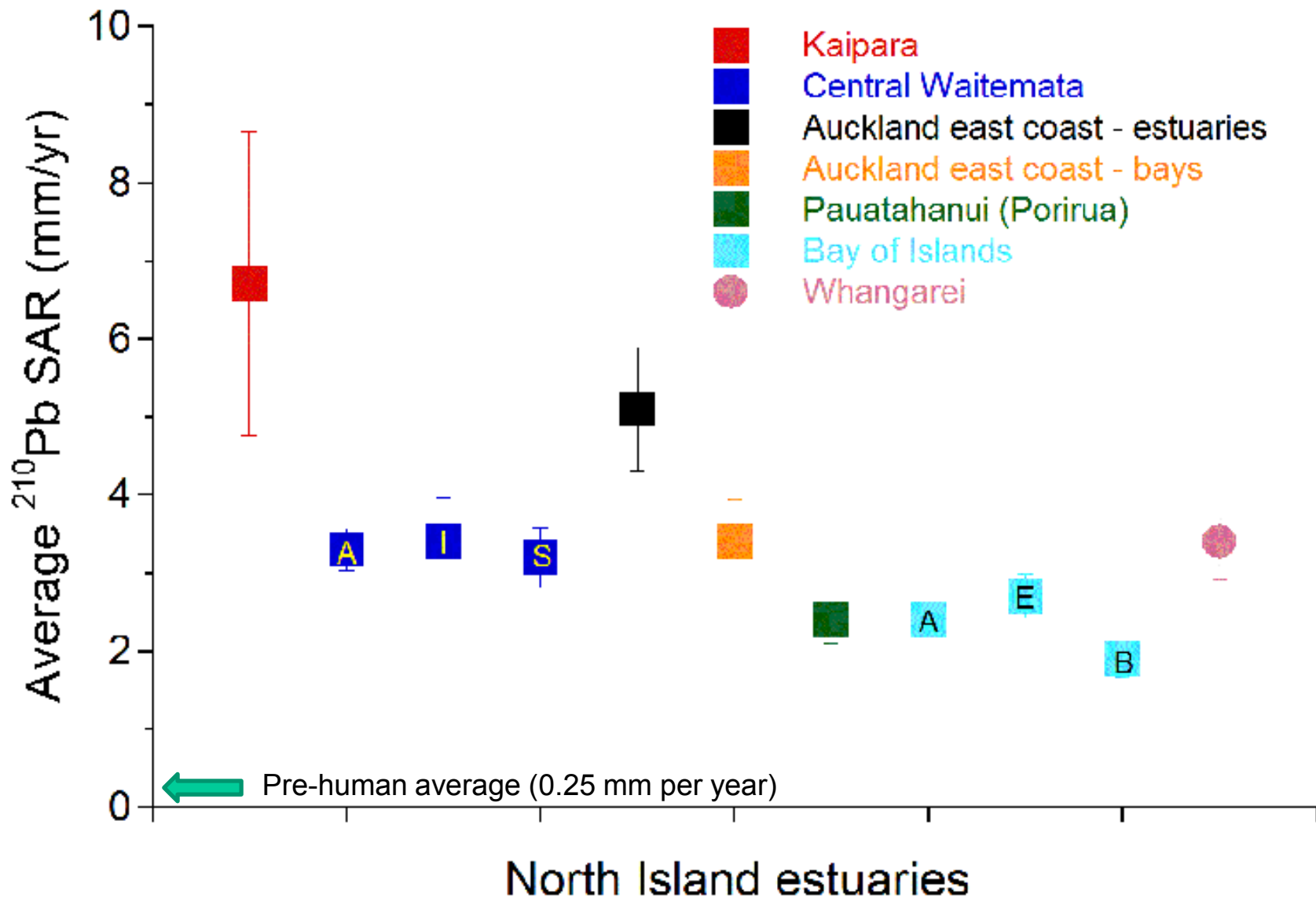
# Mangakahia River







Ngunguru Estuary



An order of magnitude (10 x) higher

Upper Whangarei Harbour



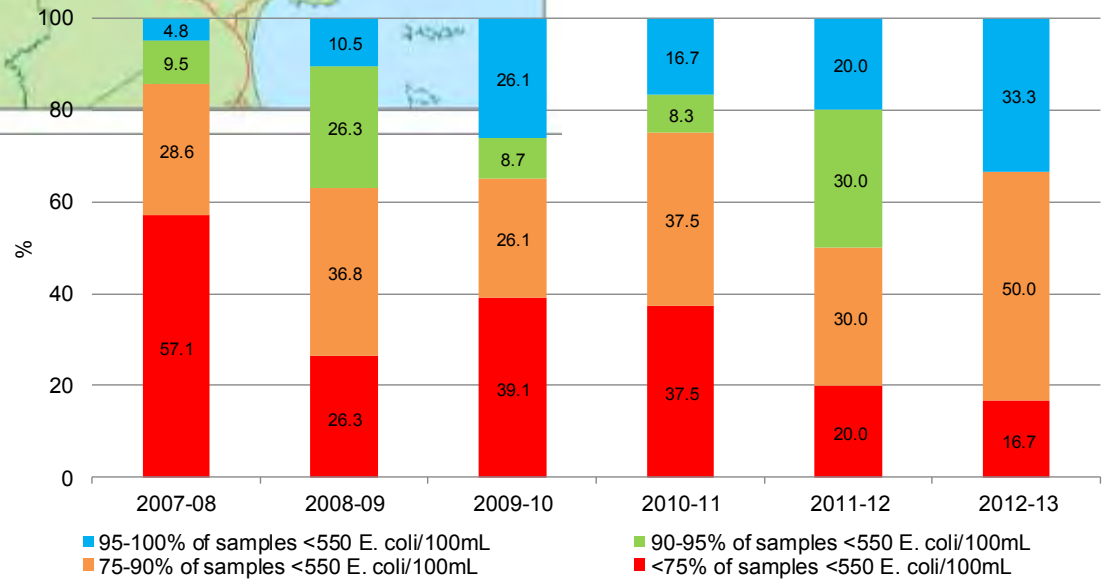
Source: Wade Doak



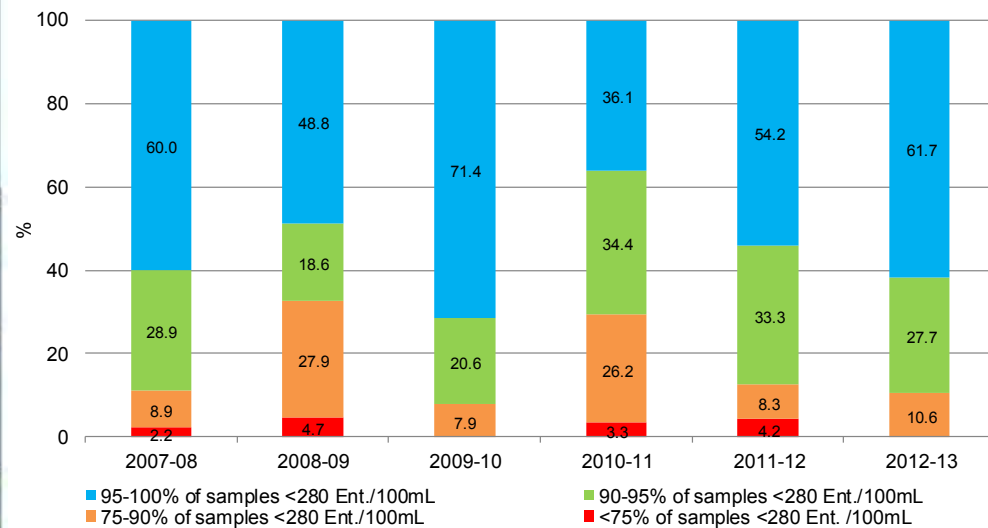




“Minimum acceptable state” for primary contact recreation (NPS-FM 2014)



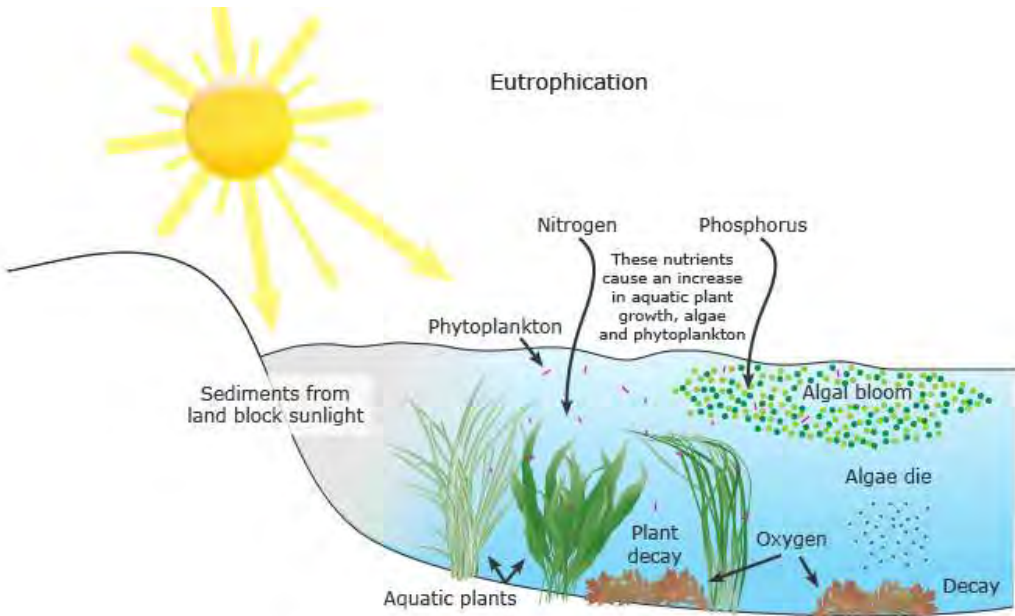




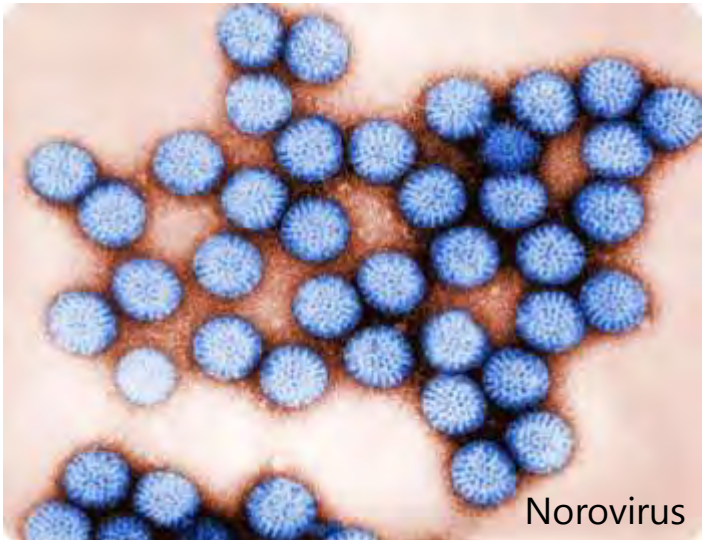
# Discussion

- Have we correctly identified / described the issues with Northland's water quality?
- Are there any issues that we have overlooked?

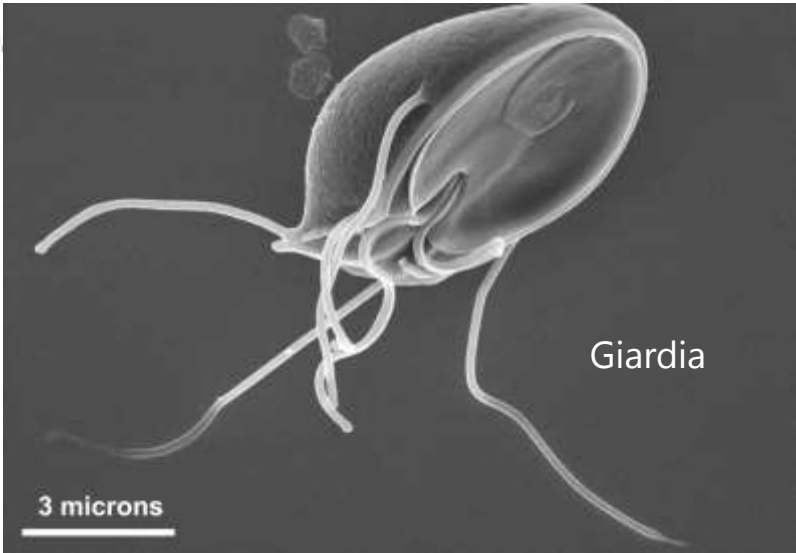
- Managing diffuse sources of the "big three" contaminants



Eutrophication leads to a loss of food, habitat, and oxygen production



Norovirus



Giardia



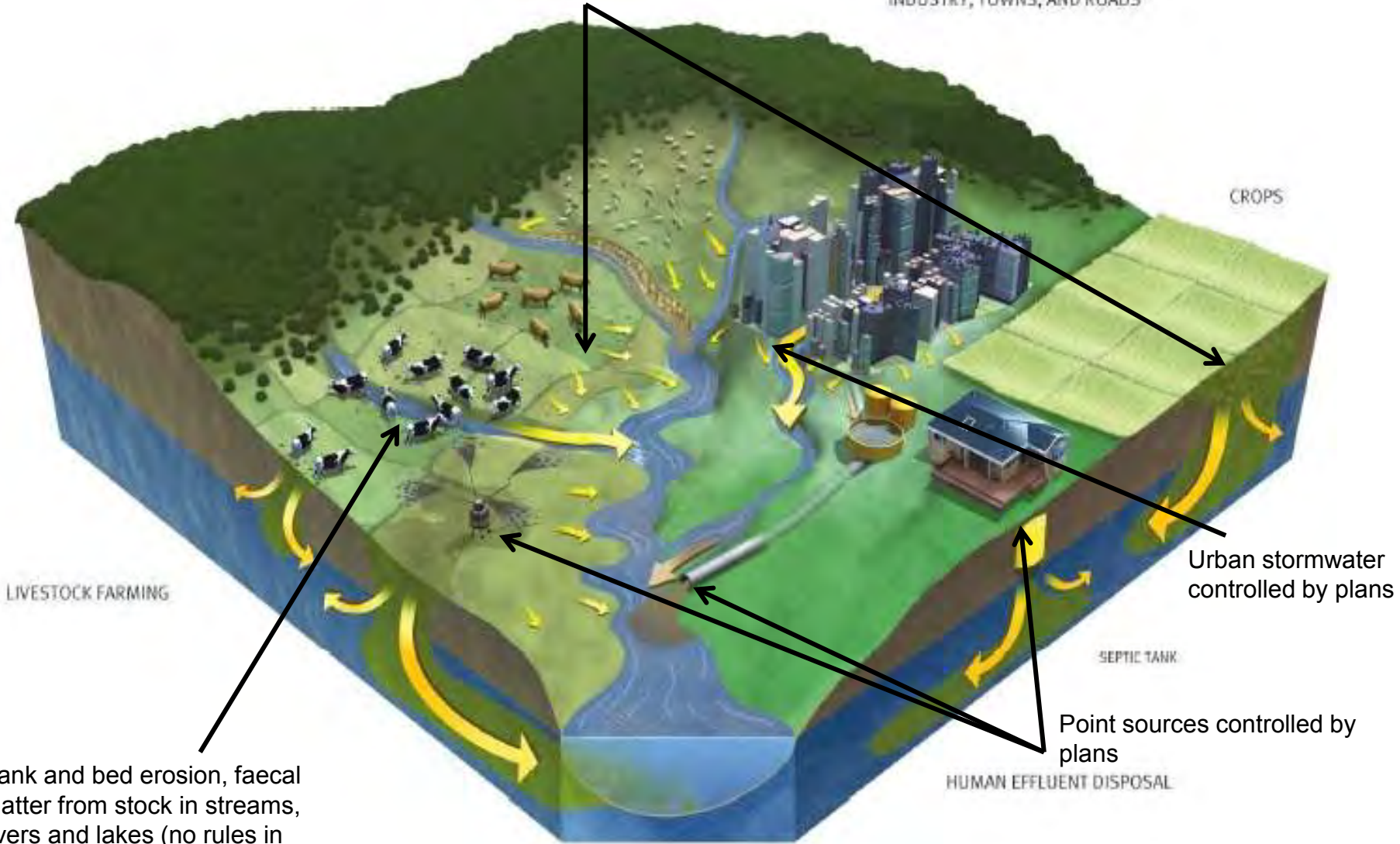
Whangarei Harbour



Runoff and leaching of nutrients, sediment, and faecal microbes from pasture and crops (no rules in current plan)

INDUSTRY, TOWNS, AND ROADS

CROPS



LIVESTOCK FARMING

Bank and bed erosion, faecal matter from stock in streams, rivers and lakes (no rules in current plan)

Urban stormwater controlled by plans

SEPTIC TANK

Point sources controlled by plans

HUMAN EFFLUENT DISPOSAL

- Fresh and coastal water quality managed in isolation

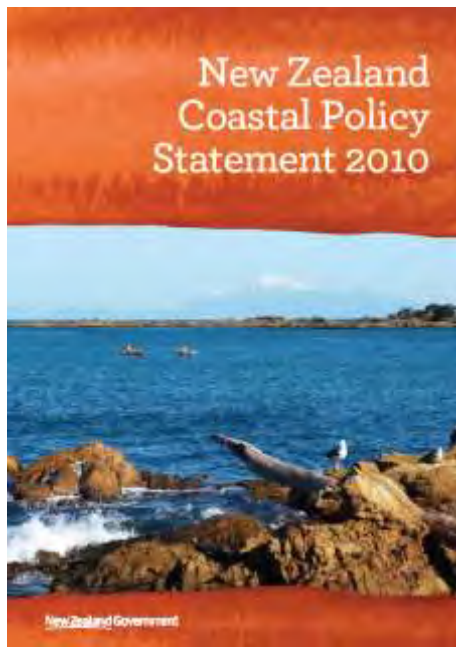


Source: Dr Malcolm Green,  
NIWA



# Issues with the management of Northland's water quality

- Implementing recent national and regional policy direction



Putting Northland first

# Issues with the management of Northland's water quality

- Administrative issues with current policies and rules
  - Limited resourcing for monitoring and enforcing permitted activity rules
  - Limited knowledge of location, timing and nature of some activities
  - Lack of clarity and certainty in some permitted activity rules

# General framework of the plans

- Broad narrative water quality objectives and no freshwater quality standards or numeric limits = lack of certainty
- Few water body/catchment specific provisions
- Best practicable option
- Land disposal
- Setbacks from water bodies
- Fresh water quality guidelines
- Minimise soil losses from land use activities



# Discharges of animal effluent, other agricultural wastes, and fertilisers

- Major source of nutrients and faecal microbes in most water bodies
- Controls focussed on point sources
- Good progress with FDE but some non-compliance issues
- Vague fertiliser rule
- No controls on nutrient inputs or losses

# Land disturbance activities

- Earthworks, vegetation clearance, land preparation, quarrying, livestock
- Major sources of fine sediment
- No controls on stock in beds of water bodies



# Land disturbance activities

- Subjective and vague conditions of rules
- Regulatory overlaps between regional and district plans





# Wastewater discharges

- Policies and rules for managing discharges from WWTPs robust
- Some WWTP's can be a significant source of nutrients, but is this an issue?
- Rules for septic systems do not recognise sensitive receiving environments
- Unauthorised wastewater overflows
- Can be a significant source of faecal microbes in some areas

# Stormwater discharges

- Generally lower yields of big three contaminants from urban areas...but still a key source
- Heavy metals below guideline levels in most areas = low probability of adverse effects
- Inconsistencies between policy and rules
- Around half of networks are consented the other half purportedly\* authorised by PA rule
- Appropriateness of discharge quality standards?

# Industrial and trade waste discharges

- The current policies and rules are robust
- No need for any significant changes



# Discussion

- Have we correctly identified / described the issues with the management of Northland's water quality?
- Are there any issues that we have overlooked?
- What do you think are the main issues with the regional plans and the way that the council implements them?

# Future management framework

- Consistent with national & regional policy direction
- New freshwater quality and quantity objectives
  - Applied to management units
  - Based on compulsory NOF attributes, and additional attributes?
  - Expressed in numeric and tight narrative terms
  - Give effect to Proposed RPS
- Limits – environmental bottom lines?
- Address point source and diffuse sources

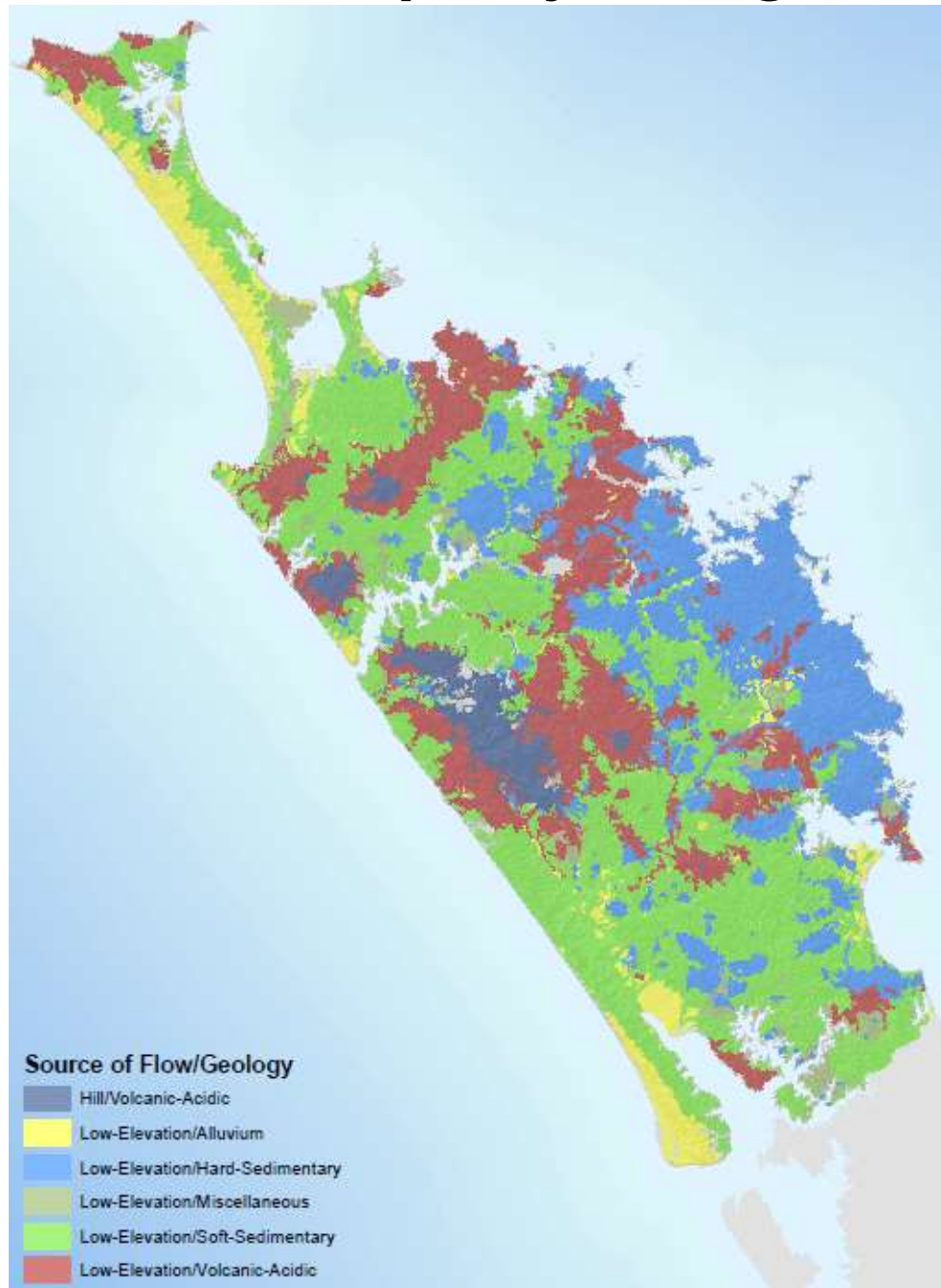
Values	Attributes		Water body type				
			Lakes	Rivers	Estuaries and harbours	Groundwater	Wetlands
Ecosystem health / Te Hauora o te Wai / mauri	Biological	Phytoplankton (chlorophyll a)	√		√		
		Periphyton		√			
		Macrophytes	#	√	#		
		Invertebrates	#	√	#		
		Fish	#	#	#		
	Physical / chemical	Nitrate toxicity		√			
		Ammonia toxicity	√	√	√		
		Total nitrogen	√				
		Total phosphorus	√				
		Dissolved inorganic nitrogen		√			
		Dissolved reactive phosphorus		√			
		Dissolved oxygen		√			
		pH		√			
		Temperature		√			
		Suspended sediment (visual clarity)		√	√		
		Suspended sediment (turbidity)		√	√		
		Deposited sediment (accumulation rates)			√*		
		Heavy metals	√	√	√		
		Organic compounds	√	√	√		
		Human health / Te Hauora o te Tangata	Biological	<i>E.coli</i> (contact recreation)	√	√	
Enterococci (contact recreation)					√		
Faecal coliforms (shellfish consumption)					√		
Planktonic cyanobacteria	√			√			
Chemical	Nitrate toxicity					√	

### Key

√	Compulsory attributes with numeric states (Appendix 2, National Policy Statement for Freshwater Management 2014).
√	Additional attributes with numeric states being <b>considered</b> by the council for inclusion in water quality objectives in regional plans.
#	Additional attributes with only narrative states being <b>considered</b> by the council for inclusion in water quality objectives in regional plans.
	Attributes not available or not applicable in the near term.

\*The council is investigating approaches for managing sediment accumulation rates in the Kaipara Harbour, Whāngārei Harbour and Bay of Islands.

# Example river water quality management units





# Example river water quality objective for ecosystem health:

*“Manage river water quality to ensure that the outcomes in the following table are met:*

Value	Aquatic ecosystem health / Te Hauora o te Wai															
River water quality management unit	Outcomes															
	Biological Attributes				Chemical Attributes								Physical Attributes			
	Fish	Invertebrates (MCI / MCI-sb)	Periphyton (chl-a mg/m <sup>2</sup> )	Macrophytes (% cover)	DO (mg/L)		Temp	pH	NO <sub>3</sub> -N (toxicity)		NH <sub>3</sub> -N (toxicity)		DIN	DRP	Toxicants (ANZECC 2000)	Water Clarity (m)
7 day mean					1 day min	Med			95 <sup>th</sup> %	Med	Max					
Hill – Volcanic acidic	Native fish communities have a composition, diversity, and abundance that are typical of the river management unit	>119	>50 - ≤120	21-40	≥7.0 - <8.0	≥5.0 - <7.5	≤21	5.8< pH <8.5	≤1.0	≤1.5	≤0.03	≤0.05	<0.015	<0.3	99%	2.2
Low elevation – alluvium		100-119	>50 - ≤120	21-40	≥7.0 - <8.0	≥5.0 - <7.5	≤21	6.5< pH <8.5	≤1.0	≤1.5	≤0.03	≤0.05	<0.015	<0.3	95%	1.8
Low elevation – hard sedimentary		100-119	>50 - ≤120	41-60	≥7.0 - <8.0	≥5.0 - <7.5	≤23	6.5< pH <8.5	≤1.0	≤1.5	≤0.03	≤0.05	<0.015	<0.3	95%	1.6
Low elevation – soft sedimentary		80-99	>50 - ≤120	41-60	≥7.0 - <8.0	≥5.0 - <7.5	≤23	6.5< pH <8.5	≤1.0	≤1.5	≤0.03	≤0.05	<0.015	<0.3	99%	1.4
Low elevation – volcanic acidic		>119	>50 - ≤120	21-40	≥8.0	≥7.5	≤21	5.8< pH <8.5	≤1.0	≤1.5	≤0.03	≤0.05	<0.03	<0.5	99%	2.2
Low-land – alluvium		100-119	>120 - ≤200	41-60	≥8.0	≥7.5	≤21	6.5< pH <8.5	≤1.0	≤1.5	≤0.03	≤0.05	<0.03	<0.5	95%	1.8

# Example water quality objective for human health:

"Manage fresh and coastal water quality to ensure that the outcomes in the following table are met:

Value	Human health for contact recreation / Te Hauora o te Tangata		
	Outcomes		
	Biological Attributes		
Water quality management unit	<i>E.Coli</i> (cells / 100 mL)	Cyanobacteria (cells / mL)	<i>Enterococci</i> (cells / mL)
Popular freshwater swimming sites	>260 and ≤540 (95 <sup>th</sup> percentile)	≤500 cells/mL of total cyanobacteria (80 <sup>th</sup> percentile)	Not applicable
All other freshwater bodies (lakes and rivers)	>260 and ≤540 (annual median)	≤500 cells/mL of total cyanobacteria (80 <sup>th</sup> percentile)	Not applicable
Estuaries and semi enclosed coastal waters	Not applicable	Not applicable	>140 and ≤280 (95 <sup>th</sup> percentile)
Open coastal waters	Not applicable	Not applicable	≤140 (95 <sup>th</sup> percentile)

# Lake Water Quality Management Units

- High value lakes
  - Specific objectives and limits
- Dune lakes
  - Further classification required?
  - Default objectives and limits
- Other natural lake
  - Further classification required?
  - Default objectives and limits

# Example lake water quality objective for ecosystem health:

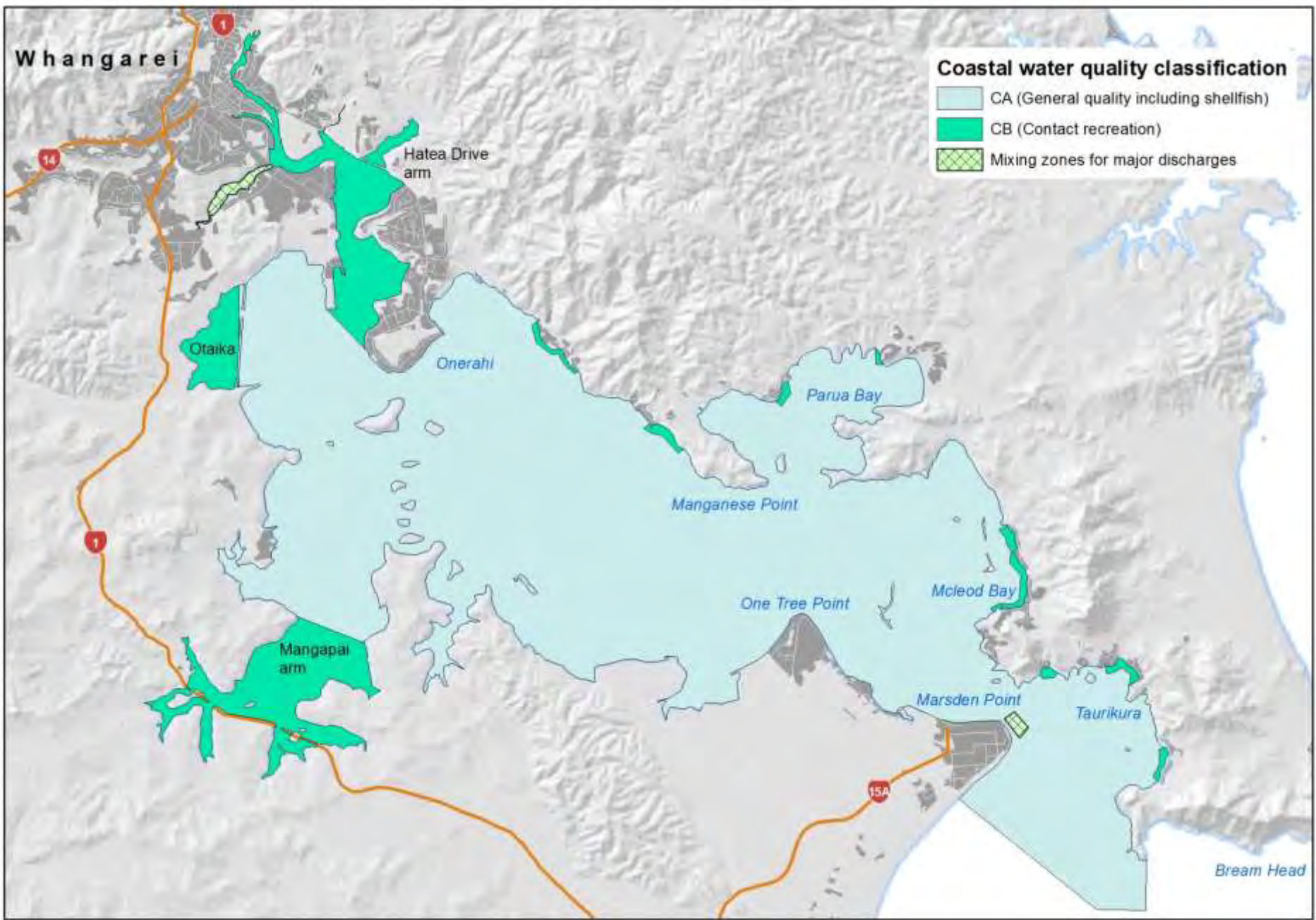
*“Manage lake water quality to ensure that the outcomes in the following table are met:*

Value	Aquatic ecosystem health / Te Hauora o te Wai									
Lake water quality management unit	Outcomes									
	Biological Attributes					Chemical Attributes				
	Fish	Invertebrates	Phytoplankton (chl-a mg/m <sup>2</sup> )		Macrophytes	Ammonia (mg NH <sub>4</sub> – N/L)		Total Nitrogen (mg/m <sup>3</sup> )	Total Phosphorus (mg/m <sup>3</sup> )	Heavy Metals (ANZECC 2000)
Annual med.			Annual max.	Med		Max	Annual med.	Annual med.		
<b>Dune lakes unit 1</b>	Native fish communities are diverse and abundant and have a composition that is characteristic of the lake management unit in its natural condition	Native macroinvertebrate communities are diverse and abundant and have a composition that is characteristic of the lake management unit in its natural condition	≤2	≤10	Macrophyte communities are dominated by naturally occurring native species	≤0.03	≤0.05	≤160	≤10	99% species protection level
<b>Dune lakes unit 2</b>			>2 and ≤ 5	≤10		≤0.03	≤0.05	≤300	>10 and ≤20	99% species protection level
<b>Dune lakes unit 3</b>			>2 and ≤ 5	≤10		≤0.03	≤0.05	>300 and ≤300	>10 and ≤20	99% species protection level
<b>Other natural lakes</b>			>5 and ≤12	>10 and ≤25		≤0.03	≤0.05	>350 and ≤750	>20 and ≤50	99% species protection level



# What about coastal water quality?

- Largely a continuation of the existing approach for managing point source discharges, but:
  - Review and revise coastal water quality management units and water quality objectives
  - Replace water quality standards with numeric objectives
  - Manage fresh and coastal water quality together



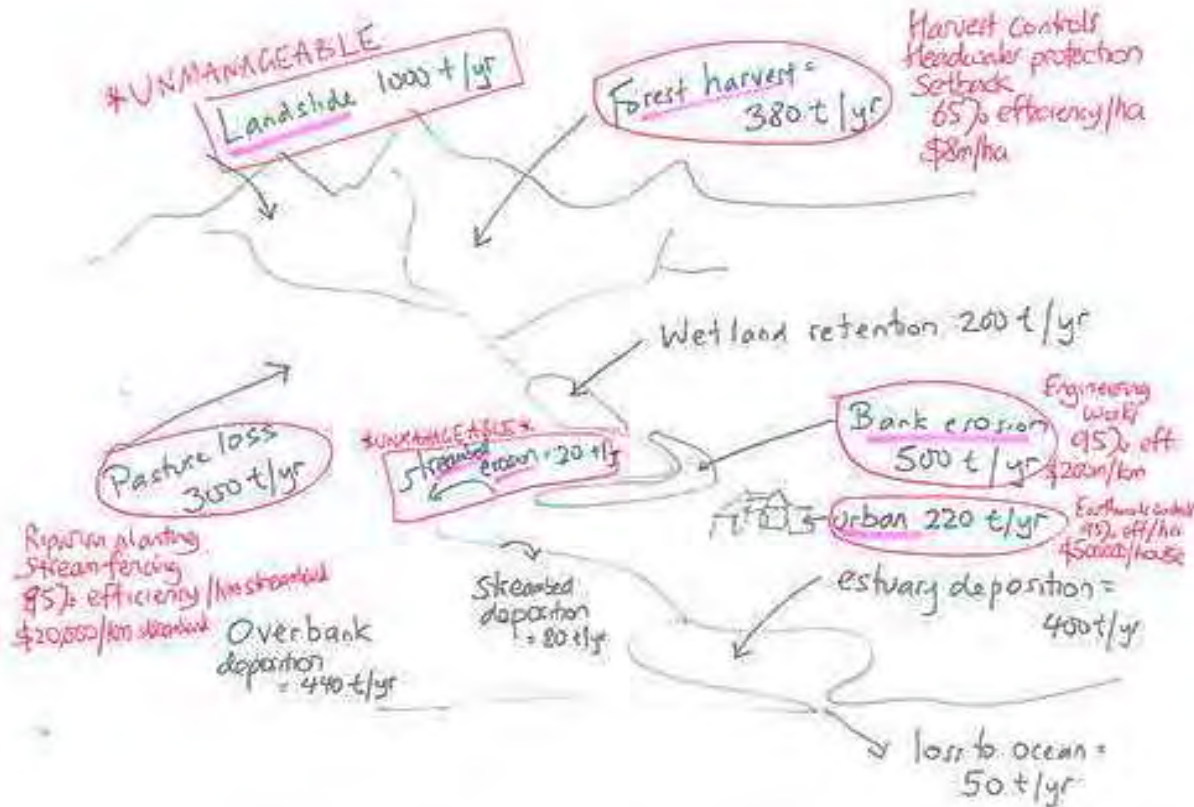
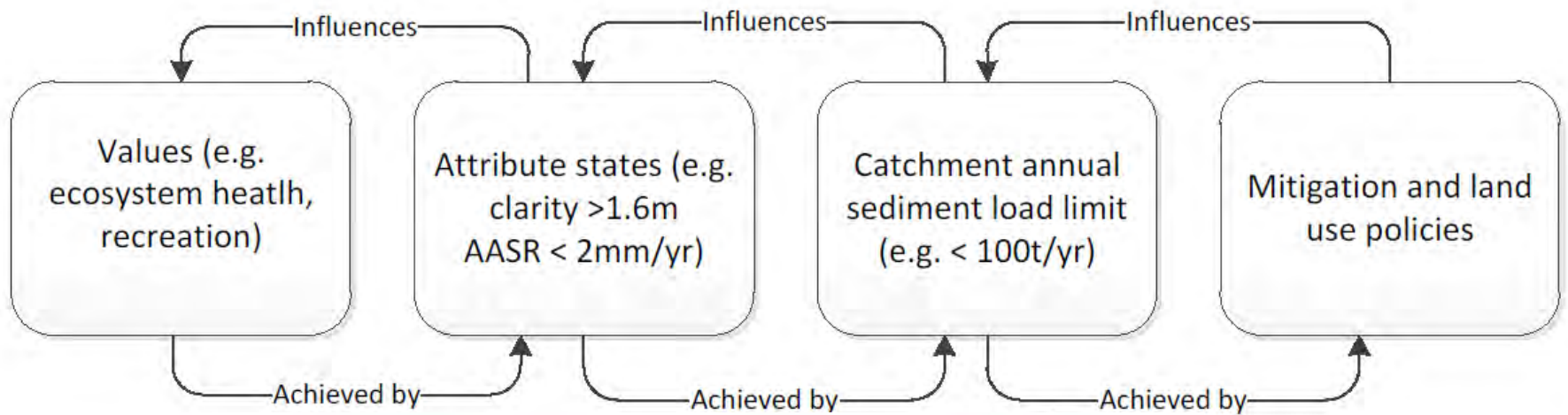
# What about coastal water quality?

- Investigating approaches to managing sediment in harbour/estuary catchments
- Specific objectives and limits for managing sediment in priority harbour catchments.

## First priorities:

- Whangarei Harbour
- Kaipara Harbour
- Bay of Islands





Sources: Dr Malcolm Green, NIWA




# Achieving fresh and coastal water quality objectives

- RMA s32
- We are not starting with a blank piece of paper



Reprint  
as at 12 September 2014



**Resource Management Act 1991**

Public Act 1991 No 69  
Date of assent 22 July 1991  
Commencement see section 1(2)

**Contents**

	Page
Title	33
1 Short Title and commencement	33
<b>Part 1</b>	
<b>Interpretation and application</b>	
2 Interpretation	33
2AA Definitions relating to notification	63
2A Successors	64
3 Meaning of effect	64
3A Person acting under resource consent with permission	64
4 Act to bind the Crown	65
4A Application of this Act to ships and aircraft of foreign States	67
<b>Part 2</b>	
<b>Purpose and principles</b>	
5 Purpose	68
6 Matters of national importance	68

# Wastewater discharges

- Retain and enforce current rules
- Permit wastewater overflows
- Network consents
- Network consents plus a containment standard
- Prohibit wastewater overflows



# Stormwater discharges

- Retain and enforce current rules
- Permit discharges to the coastal marine area (currently require resource consent)
- Control discharges to fresh and coastal waters (currently permitted subject to conditions)
- Network consents
- Stronger controls on high contaminant yielding sites, e.g. parking lots





# Discharges of animal effluent, other agricultural wastes, and fertilisers

- Change the activity status for animal effluent discharges
- Refine the rules for fertiliser discharges
- Control nutrient inputs/losses
- Incentivising / requiring GMPs
- Non-regulatory initiatives (e.g. riparian buffers, wetlands)





# Land disturbance activities

- Eliminate regulatory overlaps
- Require that the council is notified in advance of certain permitted activities being undertaken
- Refine permitted activity rules to provide greater clarity and certainty on required GMPs
- Stronger controls on the access of stock to the beds and margins of water bodies



# Land disturbance activities

- Revise definition of erosion prone land
- Setbacks from water bodies
- Revise permitted activity thresholds for earthworks and vegetation clearance
- Amend definition of the Riparian Management Zone
- Non-regulatory initiatives



# Discussion

- Do you agree with our suggested approach for setting water quality objectives and limits?
- What do you think “avoiding over-allocation” should look like in a planning framework (e.g. non-complying or prohibited rules)?
- Have we correctly identified the range of options for improving the management of point source and diffuse discharges? Are there any other solutions to addressing the issues?
- What do you think are the best option(s) for each activity?

# Wrap up



Putting Northland first



# Next steps

**Workshops – Oct 2014**

**Review complete – Dec 2014**

**Draft regional plan released – mid 2016**

**Proposed regional plan notified – mid 2017**

# Workshop evaluations



# Thank you

## Ben Tait

Policy Specialist - Water



09 insert your direct dial here



bentait@nrc.govt.nz



www.nrc.govt.nz



Follow us on  
Twitter

[Twitter.com/NRCexpress](https://twitter.com/NRCexpress)

# Stay connected



**0800 002 004**



**[www.nrc.govt.nz](http://www.nrc.govt.nz)**



**24/7 Environmental Hotline**  
**0800 504 639**

