

BANKS PENINSULA WATER MANAGEMENT ZONE COMMITTEE
18 October 2011

**A meeting of the Banks Peninsula Water Management Zone Committee was held in
The Society Lodge, Ferrymead Heritage Park on Tuesday 18 October 2011 at 4.09pm**

PRESENT: Donald Couch, Commissioner Environment Canterbury
Yvette Couch-Lewis, Community Representative
Steve Lowndes, Community Representative
Pam Richardson, Community Representative
Richard Simpson, Community Representative
Iaeon Cranwell, Te Rūnanga o Wairewa
June Swindells, Te Hapu ō Ngāti Wheke/Rapaki
Pere Tainui, Te Rūnanga o Ōnuku

APOLOGIES: An apology for absence was received and accepted from Kevin Simcock, Elliot Briggs and Claudia Reid.

Iaeon Cranwell arrived at 5.33pm and was absent for clause 1-9 and part of 10.

1. CONFIRMATION OF APPOINTMENT OF INTERIM CHAIRPERSON

The Committee were asked to consider the appointment of an interim Chairperson, until such time when the Committee chose to appoint a permanent Chairperson.

It was **decided** on the motion of Steve Lowndes, seconded by Pam Richardson, that the Committee appoint Donald Couch, Environment Canterbury Commissioner, as the interim Chairperson.

2. DEPUTATIONS BY APPOINTMENT

Nil.

4. IDENTIFICATION OF URGENT ITEMS

Nil.

5. IDENTIFICATION OF ANY GENERAL PUBLIC CONTRIBUTIONS

Nil.

6. REGIONAL COMMITTEE UPDATES

The Committee is asked to consider how it wishes to deal with Regional Committee Updates.

The Committee discussed the variety of ways it could be kept informed of Regional Committee matters, including written and verbal updates from the Regional Committee representative, with the purpose of encouraging open communication between the Regional Committee and the Zone Committee. The Committee **agreed** that a brief written update where possible would be useful to be provided to Committee members on key issues of relevance, to be further discussed at the Zone Committee meetings if required.

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7. UPDATE ON WORK PLAN

The Committee were provided with a handout containing a summary of the current work plan. The Committee were reminded of the upcoming public workshops, to which all Committee Members were encouraged to attend.

8. ZONE COMMITTEE EXERCISE: KEY PRINCIPLES OF CATCHMENT PROJECTS

The Committee split up into focus groups to map the key principals of Community Base catchment projects, and were provided with a handout with further detail on the key issues.

The groups discussed key areas of interest in the following areas:

- Planning;
- Partnership;
- Learning;
- Integration.

The Committee discussed the use of the term catchment and how this can be defined, and discussed possible ways of grouping areas together into catchments for the purpose of assessing specific issues for these areas. The Committee **agreed** that location, integration, cohesiveness, working together as a whole and balance were all key factors in catchments.

9. CULTURAL VALUES - PRESENTATION FROM EACH OF THE COMMITTEE'S RŪNANGA REPRESENTATIVES

The Committee received presentations from June Swindel and Pere Tainui on the history and cultural background of the Runanga. The Committee **agreed** to defer the briefings from Iaeen Cranwell and Elliot Briggs until its next meeting on 15 November 2011.

10. STATE OF WATER RESOURCE

The Committee received a presentation from Tim Davie and Lesley Bolton-Ritchie regarding the state of the Water Resource (refer **attached**). Key areas of consideration were an overview of the types of Monitoring undertaken and information on the water quality and ecosystem health including current conditions and trends.

Key issues discussed included:

- Question were raised regarding measuring the water flow in Pigeon bay and its effect on the flow within Akaroa Harbour. Tim Davie advised the Committee that there was a correlation between the catchments; however this did not mean that the flows were the same, but that there was a relationship between the rise and fall of water flows relating back to the source of the water from the springs at the top of the hills.
- Contact recreation – over the summer months samples will be taken by staff measuring the micro bio levels in all the coastal or marine environments, including rivers, around Canterbury.
- Swimming water quality information is available on the website, including information over the quality of the water long term averages.
- E coli trigger levels for sampling - averages graded good over the last five years.
- Questions regarding why Pigeon Bay has not had water quality testing, the Committee were advised this is because there have been no reported problems in the area, and that monitoring would begin if problems were highlighted.

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10 Cont'd

- Ecosystem health important in determining water quality as different species of invertebrates can indicate the health of the water, due to the variety in tolerances of these to water pollution.
- Query regarding who to contact with suspected water quality issues within the community. Advised to contact Environment Canterbury on 0800 76 55 88 who will respond if there is an issue.
- Environment Canterbury collects water samples in relation to shellfish for sites where it is known that they are gathered for food. The water sample is taken and tested for different organisms which gives an indication of how safe the shellfish are to eat, there is a balance between testing and preserving for food as a large number of shellfish need to be collected to test.
- Major issues for the harbour is sediment, comparative data suggests that less of an issue in Akaroa. Sediment testing is undertaken.
- Rainfall has a significant impact on water quality. Notable high concentration of certain pollutants after heavy rainfall, particularly impacting Rapaki.
- Questions raised as to whether there has been a specific study undertaken to evaluate the impact of the earthquakes on water quality. The Committee was advised that no overall test had been required, this was done on a case by case basis where there were problems or changes that would effect water quality.

11. BIODIVERSITY IN THE ZONE OVERVIEW

The Committee will receive a presentation from Frances Schmechel on an Overview of Biodiversity issues within the Zone, including Canterbury Water Management Strategy Biodiversity tools, and immediate steps to be taken (refer **attached**).

The Committee highlighted the following issues to discuss further at the next meeting:

CATCHMENT AREAS

- How we define catchments on Banks Peninsula, including what method used to divide the areas, for example, using rivers, streams or do we consider larger areas such as the Bays. Noted that this would depend on the purpose the catchment was being used for.
- One suggestion is to use communities and historical catchment groupings.

FUNDING

- Assumptions funding that would come would be regional or zone specific.
- Funding third outsourced funding options, including options to get community and land owner buy in for projects to ensure their sustainability long term.
- Discussed the pros and cons of focusing the funds available on more strategic issues.

CCC ECOLOGICAL SURVEY LANDOWNERS AND CITY COUNCIL

- Questions regarding the timing of this report, believed to be the middle of next year. The Committee discussed this survey in terms of the relevance for the ZIP.
- Given the length of time for the final report, the Committee questioned if it was possible to get key results in the interim including the key sites of importance.
- The CCC survey is considering terrestrial vegetation sites, rather than a wider sweep of eco type, coming from a Resource Management Act background, the Committee discussed that there was a need to look at issues more broadly as this report may not consider many relevant issues such as streams and fish issues.

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11 Cont'd

PRIORITY AREAS

- Ecological and cost effectiveness.
- Consider the immediate steps on the ground.
- Need to ask the community what they see as priorities.
- Indigenous biodiversity projects.
- Salt marshes, estuary, fresh water streams key areas.
- Debate around whether its more important to look after all the natural regeneration projects, rather than the large restoration projects, and the need to consider other ways of dealing with these issues.

12. REVIEW DRAFT NEWSLETTER TO GO TO ALL BANKS PENINSULA HOUSEHOLDS

The Committee received a draft version of a newsletter to go to all Banks Peninsula Households, and were asked for any comments or feedback.

Yvette Couch-Lewis advised the Committee that she had been approached by a local Community publication in Lyttelton to give an interview on the work on the Committee and queried if there was any guidance for the Committee on dealing with the media. The Committee were advised that there was information available in the Code of Conduct regarding interaction with the media, which was to be discussed at the Committees next meeting. In the interim it was **agreed** that the interim Chairperson would attend the interview with Yvette Couch-Lewis.

13. COMMUNITY ENGAGEMENT – LATE NOVEMBER AND EARLY DECEMBER PUBLIC MEETINGS IN AKAROA, ALLANDALE AND LITTLE RIVER

The Committee was advised of the details for the upcoming dates and times for the public meetings in Akaroa, Allandale and Little River. The details were confirmed as follows:

- Monday 28 November at the Living Springs – Auditorium, 7pm-9pm;
- Tuesday 29 November at the Little River Rugby Clubrooms, 7pm-9pm;
- Tuesday 6 December at Akaroa Gaiety Hall, 7pm-9pm.

14. PROPOSED AKAROA AND FISHERMANS BAY FIELD TRIP (DAYTIME AND EVENING) – SUNDAY 20 NOVEMBER 2011

The Committee were advised of the proposed date for the field trip to Akaroa and Fishermans Bay on Sunday 20 November 2011. The purpose of this trip is to consider topics such as waste water and water supply, and to visit key locations such as Misty Peak Reserve. The Committee suggested that other areas of interest could be monitoring Community water supply and minimum flows, and ~~Almond~~ Aymers Valley Stream (*amendment made at the 15 November 2011 Committee meeting, during the confirmation of minutes item, clause 2*).

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15. APPOINTMENT OF REGIONAL COMMITTEE MEMBER

The Committee discussed the request to replace Claudia Reid as the Committees Representative on the Regional Committee, who has been unable to attend ~~these~~ recent meetings due to a number of other *commitments (amendment made at the 15 November 2011 Committee meeting, during the confirmation of minutes item, clause 2)*. The Committee considered options to fulfil this appointment, and concern was expressed that this was not able to be done at the Committees first meeting until the Committee had had further meetings and could assess who would be the most appropriate person to represent the Committee.

It was **decided** on the motion of Pam Richardson, seconded by Steve Lowndes that the Interim Chairperson, Donald Couch, replace Claudia Reid as the Committees representative on the Regional Committee, as an interim arrangement, until such time that the Committee is able to appoint a permanent representative.

16. OTHER MATTERS

16.1 NEXT MEETING - TUESDAY 15 NOVEMBER 2011

The Committee were advised of the next meeting of the Committee to be held on Tuesday 15 November, at 3 4pm in Akaroa Sports Complex (*amendment made at the 15 November 2011 Committee meeting, during the confirmation of minutes item, clause 2*). Chairperson Donald Couch tendered his apologies for this meeting.

16.2 PROPOSED ZONE COMMITTEE FIELD TRIP - SUNDAY 20 NOVEMBER 2011

The Committee were advised of the proposed date for the Committee Field Trip for Sunday 20 November 2011, with further details to be provided in due course.

16.3 GENERAL PUBLIC CONTRIBUTION

Committee Members raised concerns received from the public regarding Algal Blooms around Banks Peninsula particularly from Little Akaroa stream, and suggested that this be an area that the Committee should consider investigating.

The Committee asked for clarification regarding the boundary and jurisdiction in terms of the sea, including the role of the Committee in terms of sea water and the Coastal Environment.

Committee Members requested that issues raised by the Committee from members of the public be recorded at the Committee meetings, to ensure the issues can be referred back to further into the process.

The meeting concluded at 8.26pm

CONFIRMED THIS 15 DAY OF NOVEMBER 2011

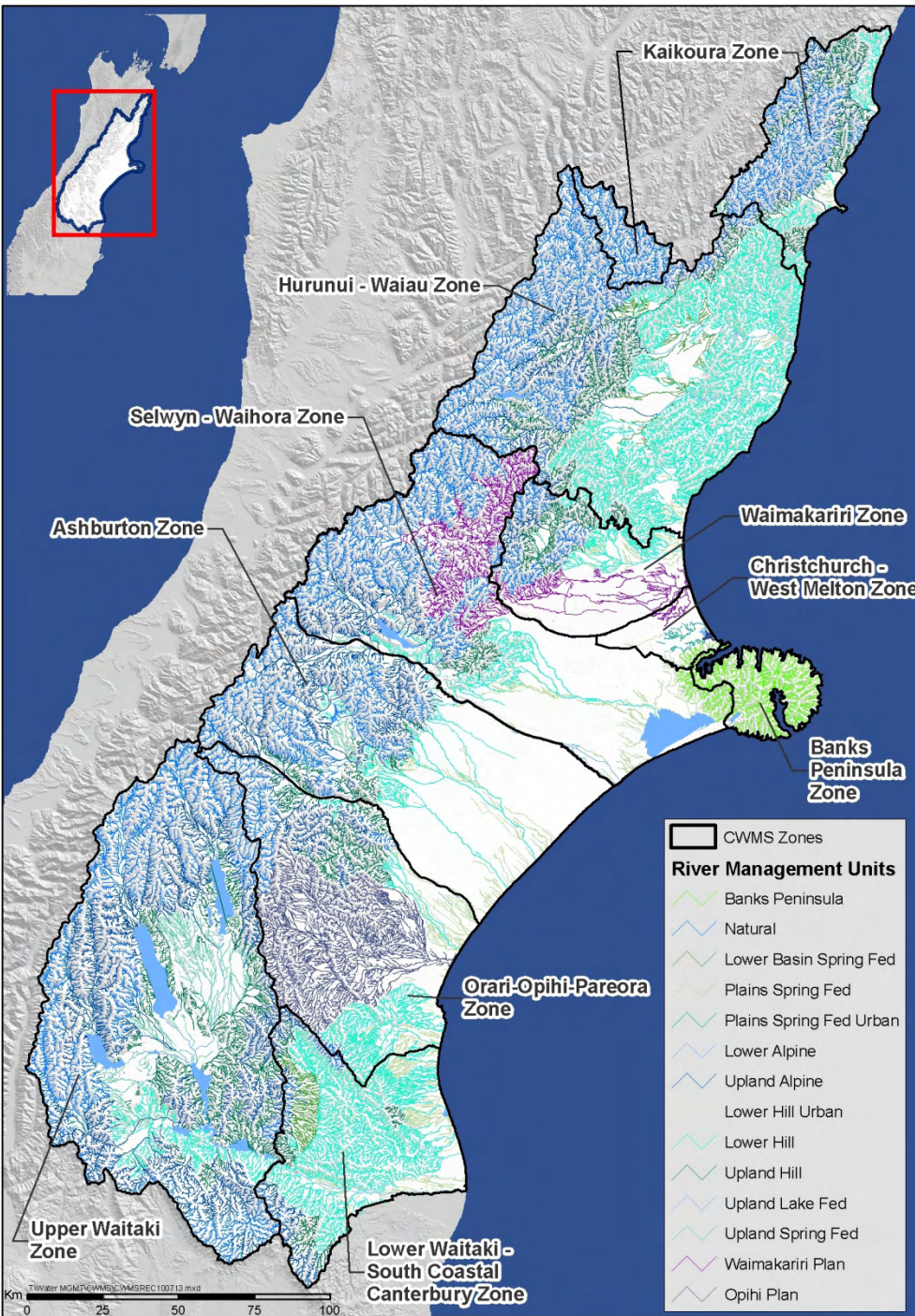
**DONALD COUCH
INTERIM CHAIRPERSON**

Banks Peninsula zone: overview on state of the water resources

Overview

- Monitoring done
- Water quality & ecosystem health
 - Current state
 - Trends

River types

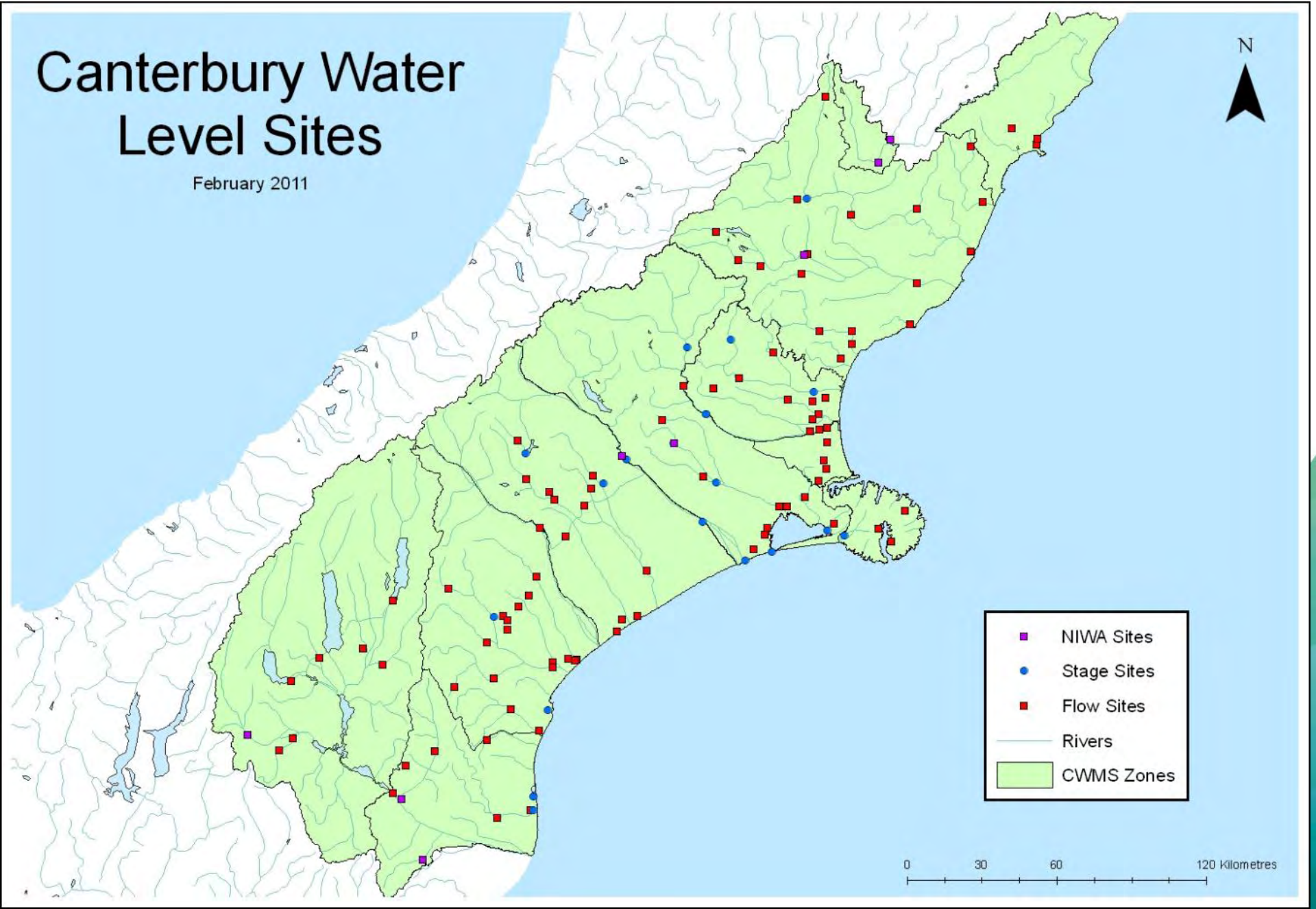
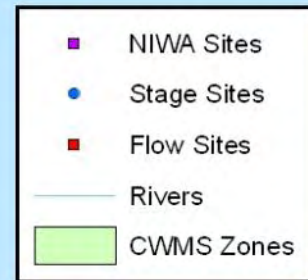


Types of monitoring

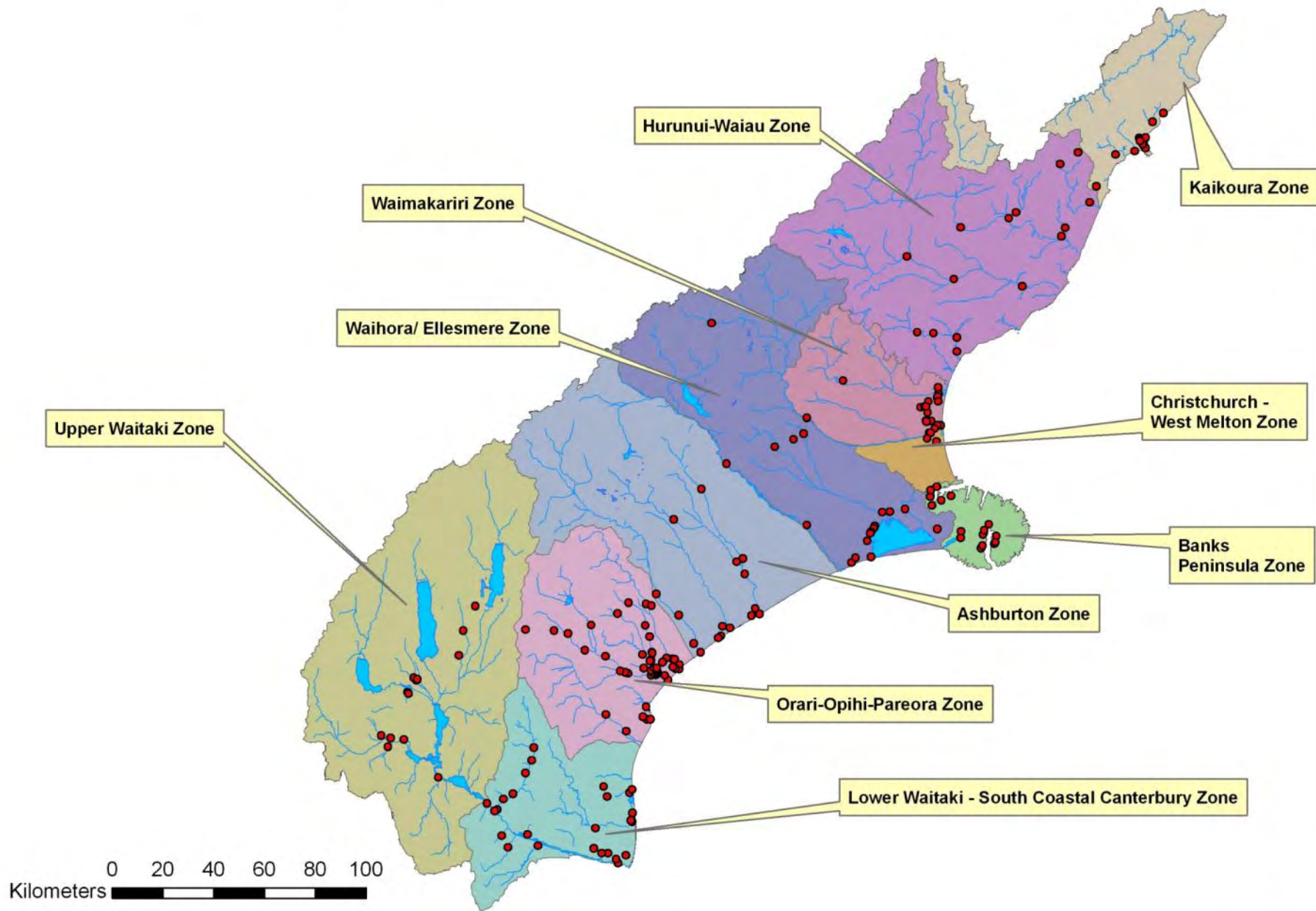
- Consent compliance
- State of the environment
 - Long term
 - Water level/flow and rainfall
 - Water quality
 - Ecosystem health
- Contact recreation
 - Microbiology in fresh & coastal waters used for swimming etc.
- Investigations
 - One over a short period of time off studies in an area

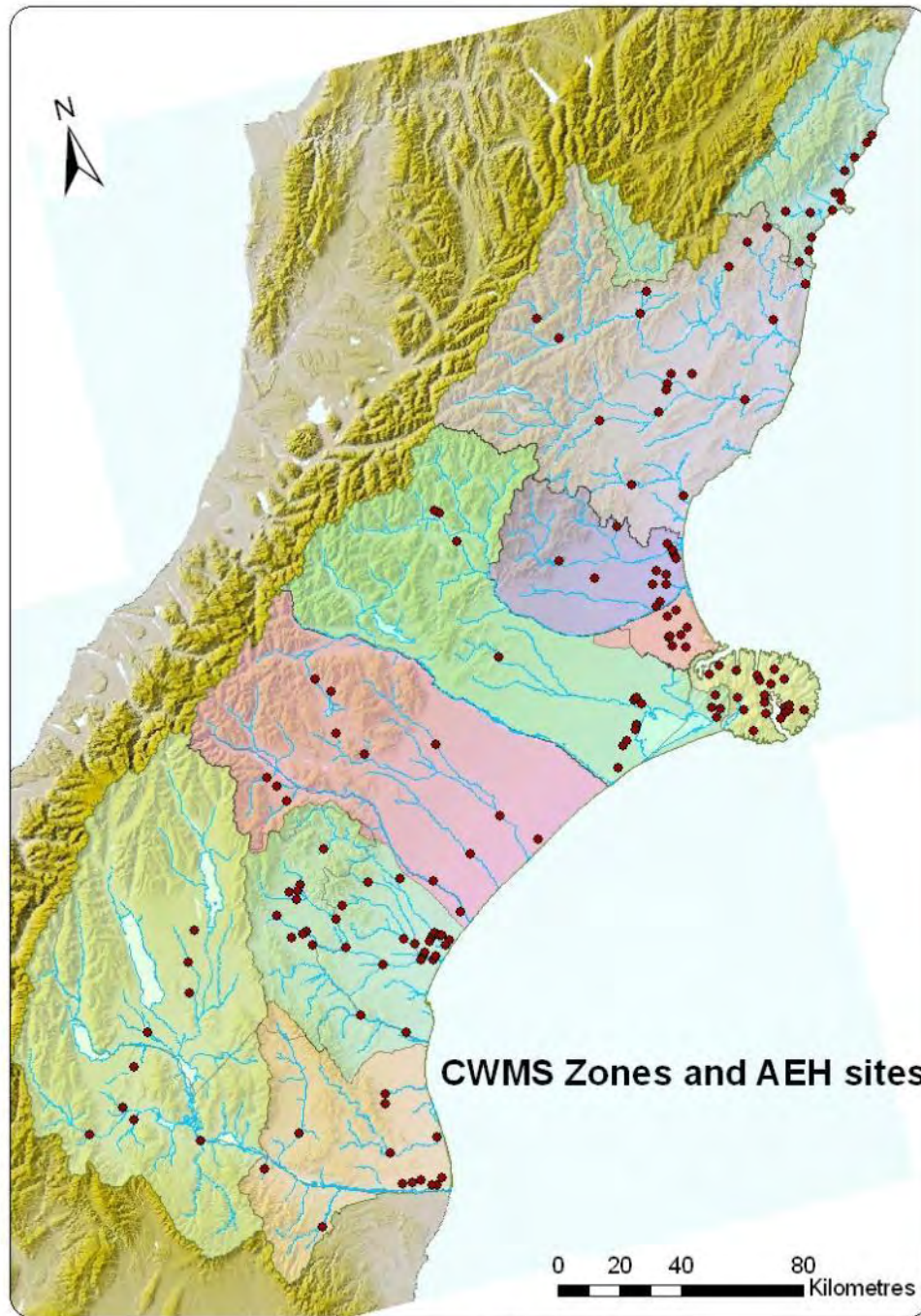
Canterbury Water Level Sites

February 2011

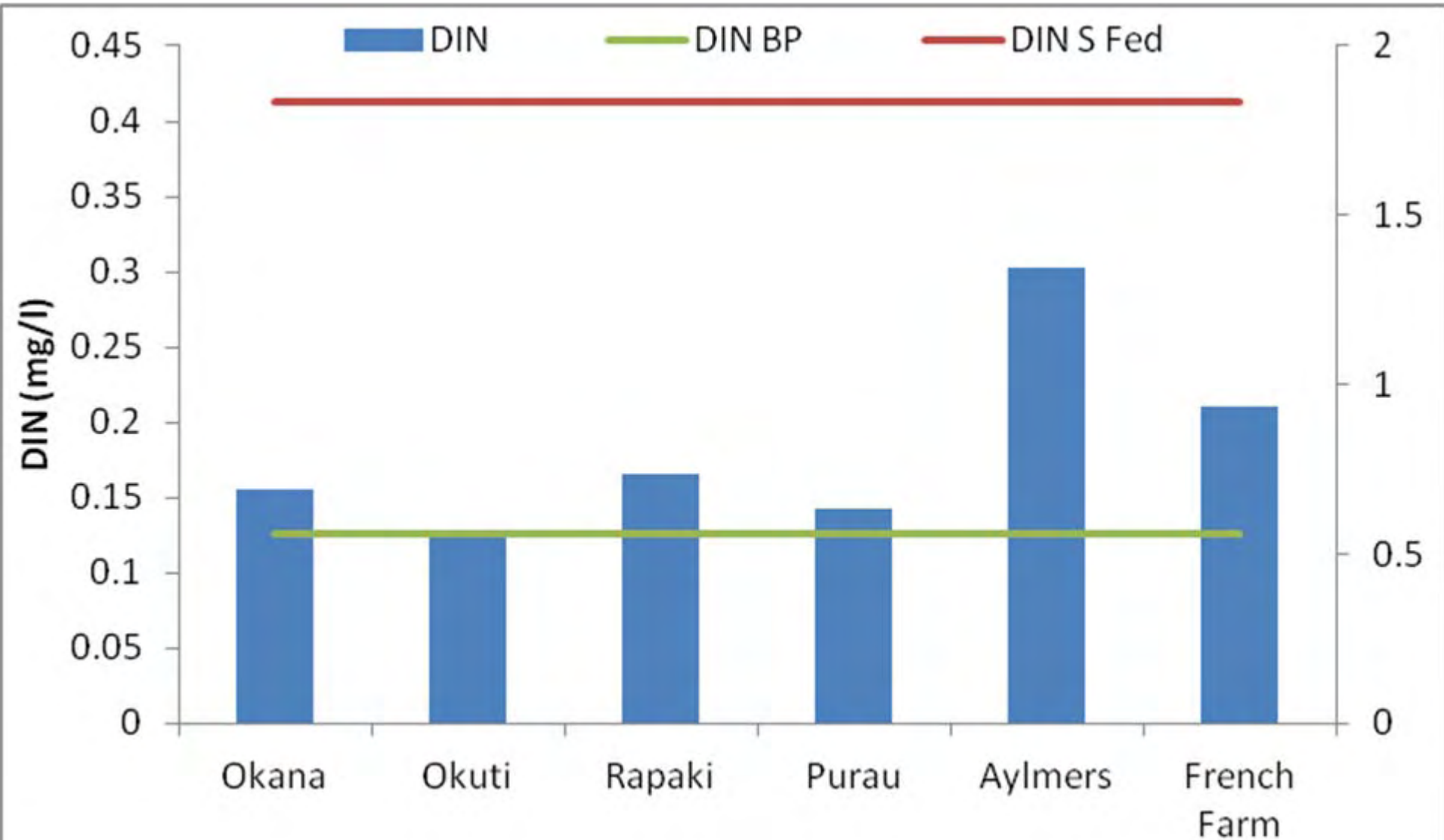


Distribution of ECAN regional rivers long-term water quality monitoring sites by water management zone

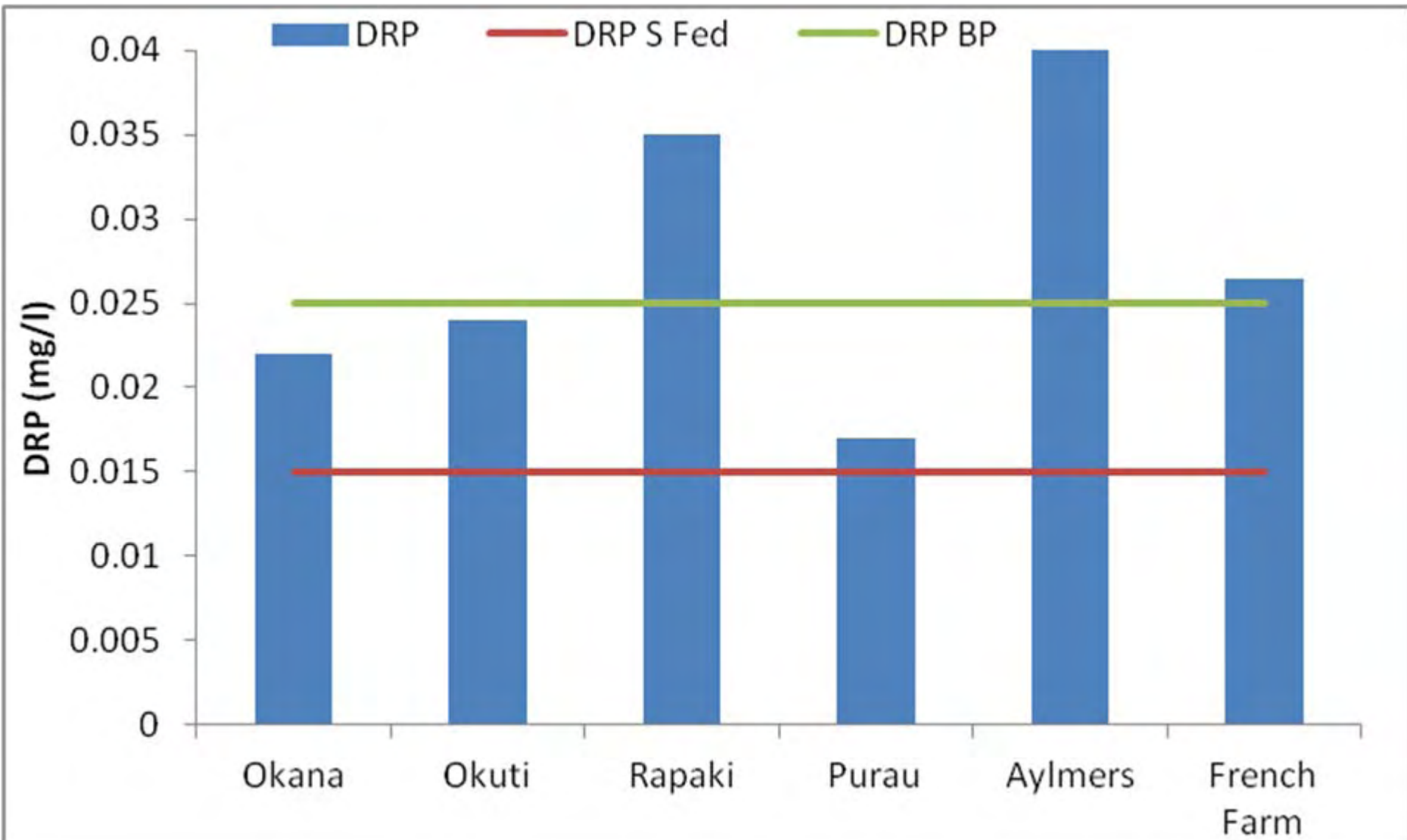




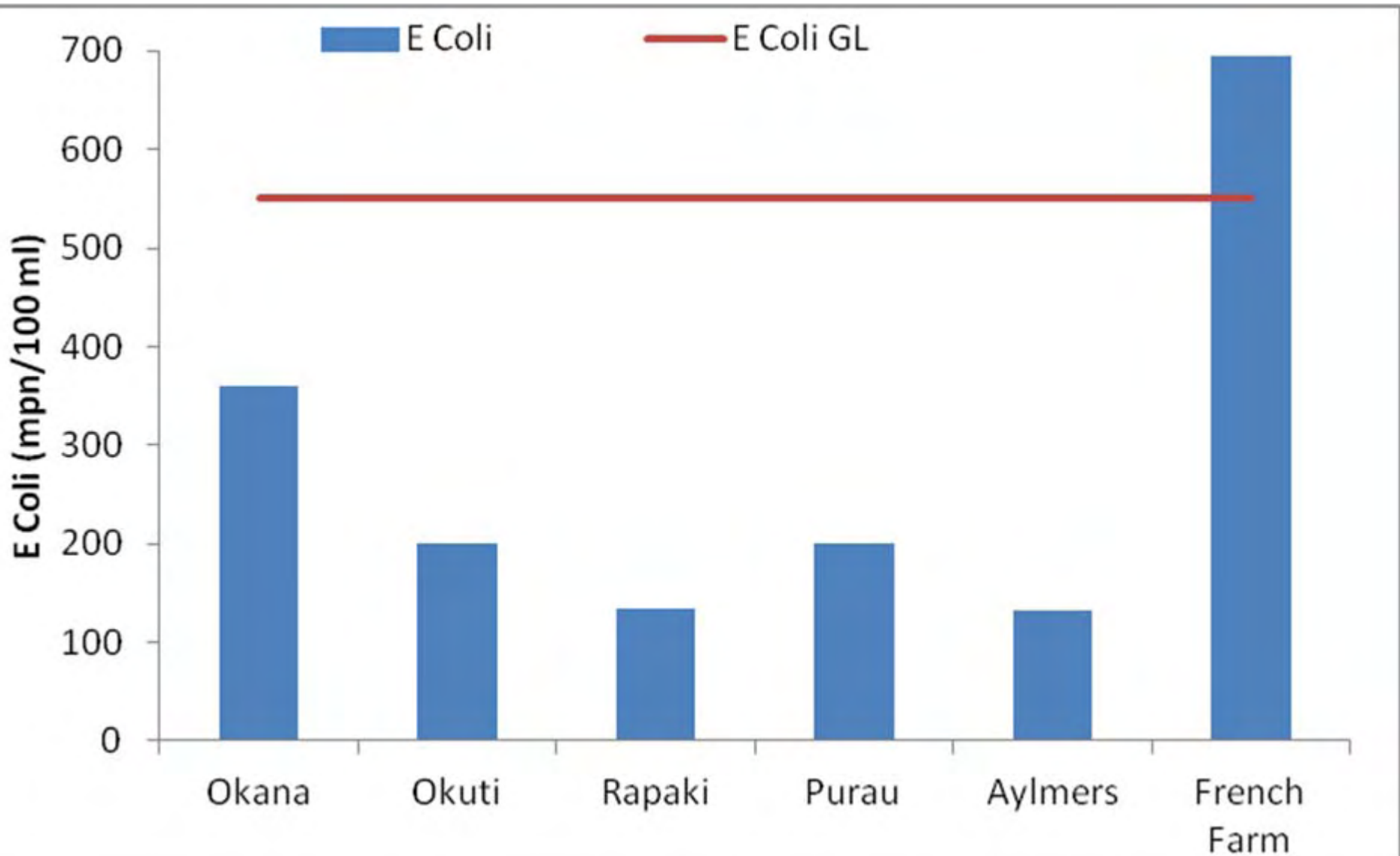
Surface water nitrogen



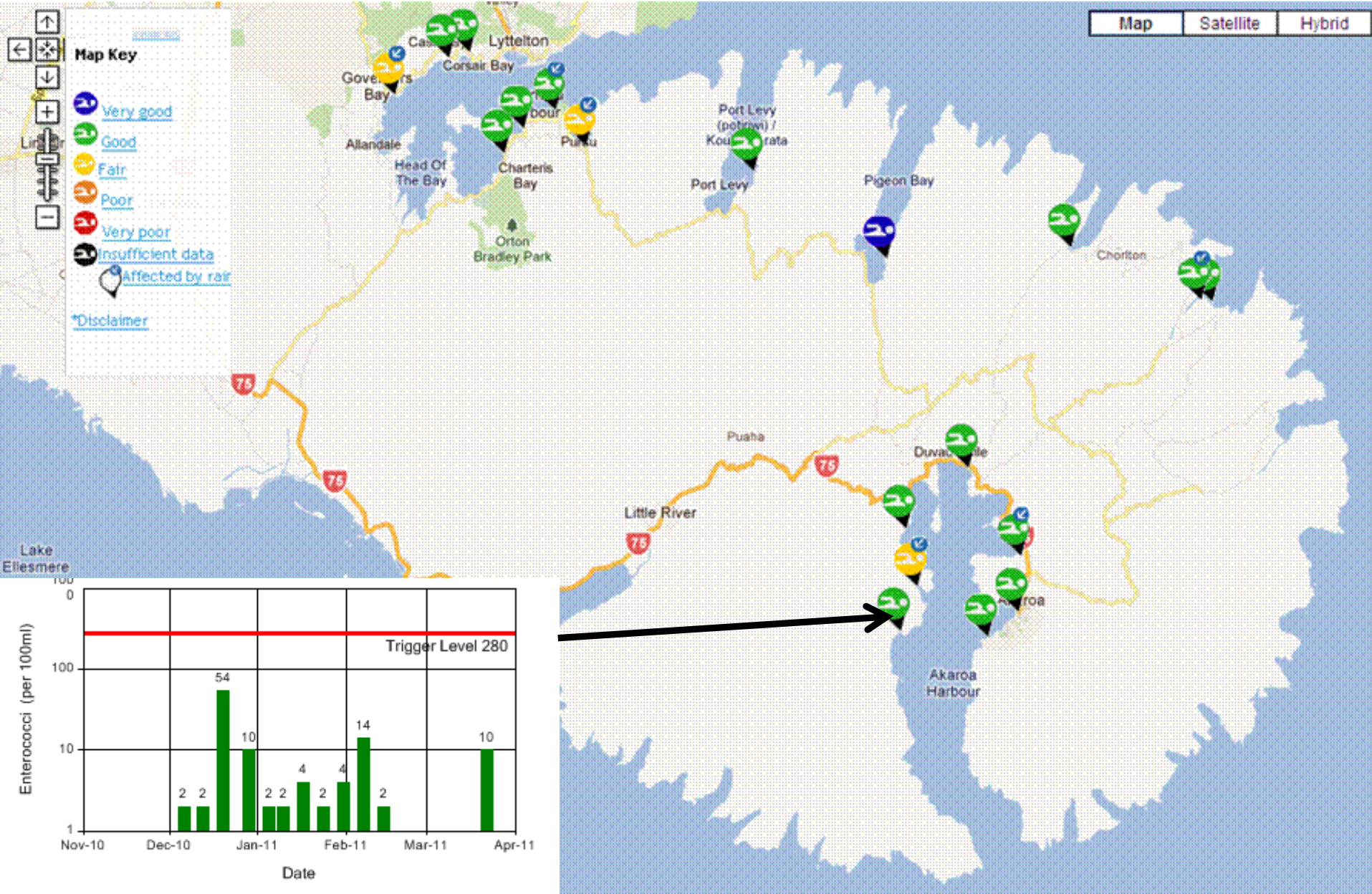
Surface water phosphorus



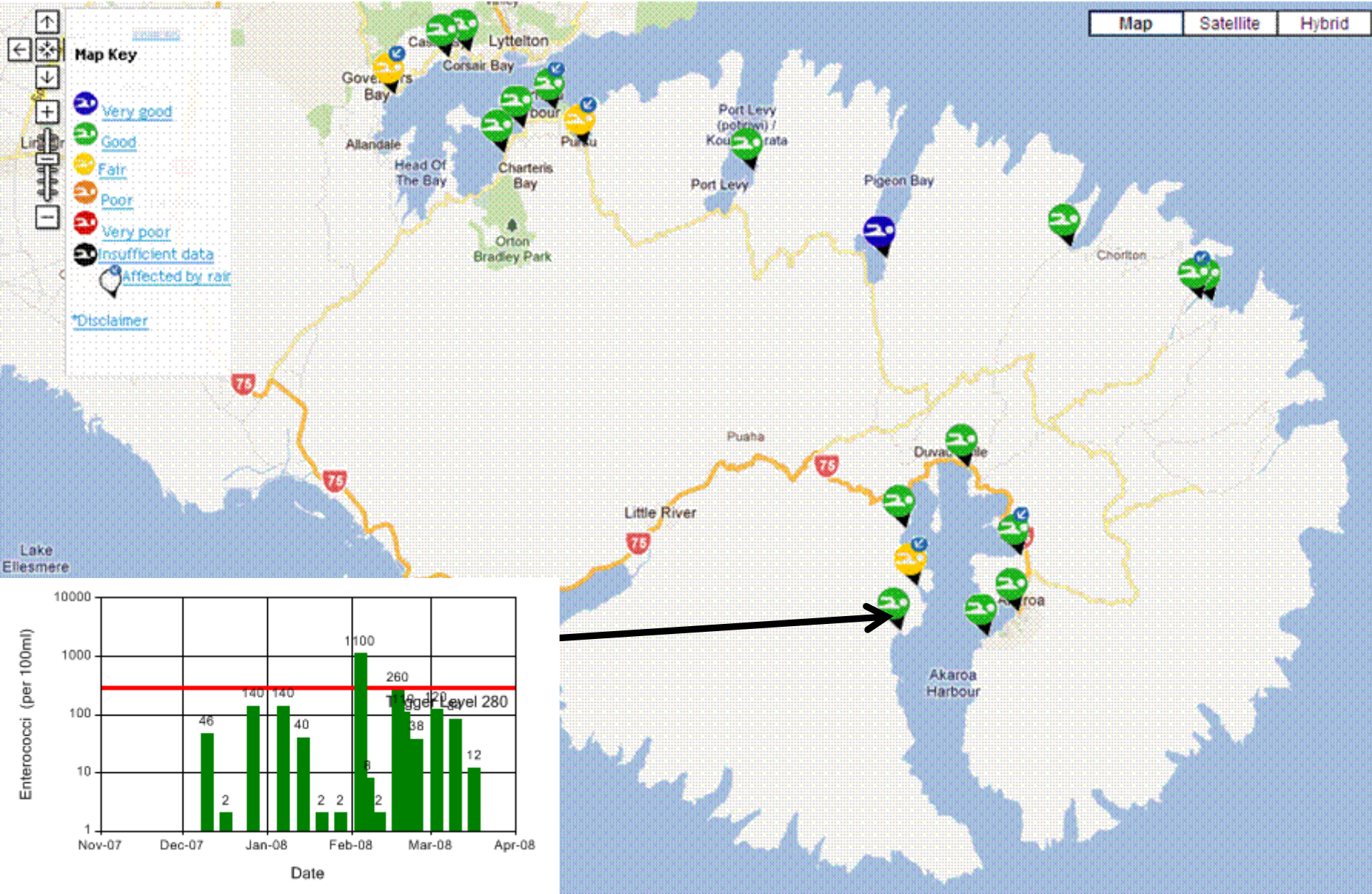
Surface water *E. coli*



Contact recreation monitoring



Contact recreation monitoring



Ecosystem health

- Using invertebrates as indicators of stream health
 - Abundance and diversity
- Habitat and water quality are both important

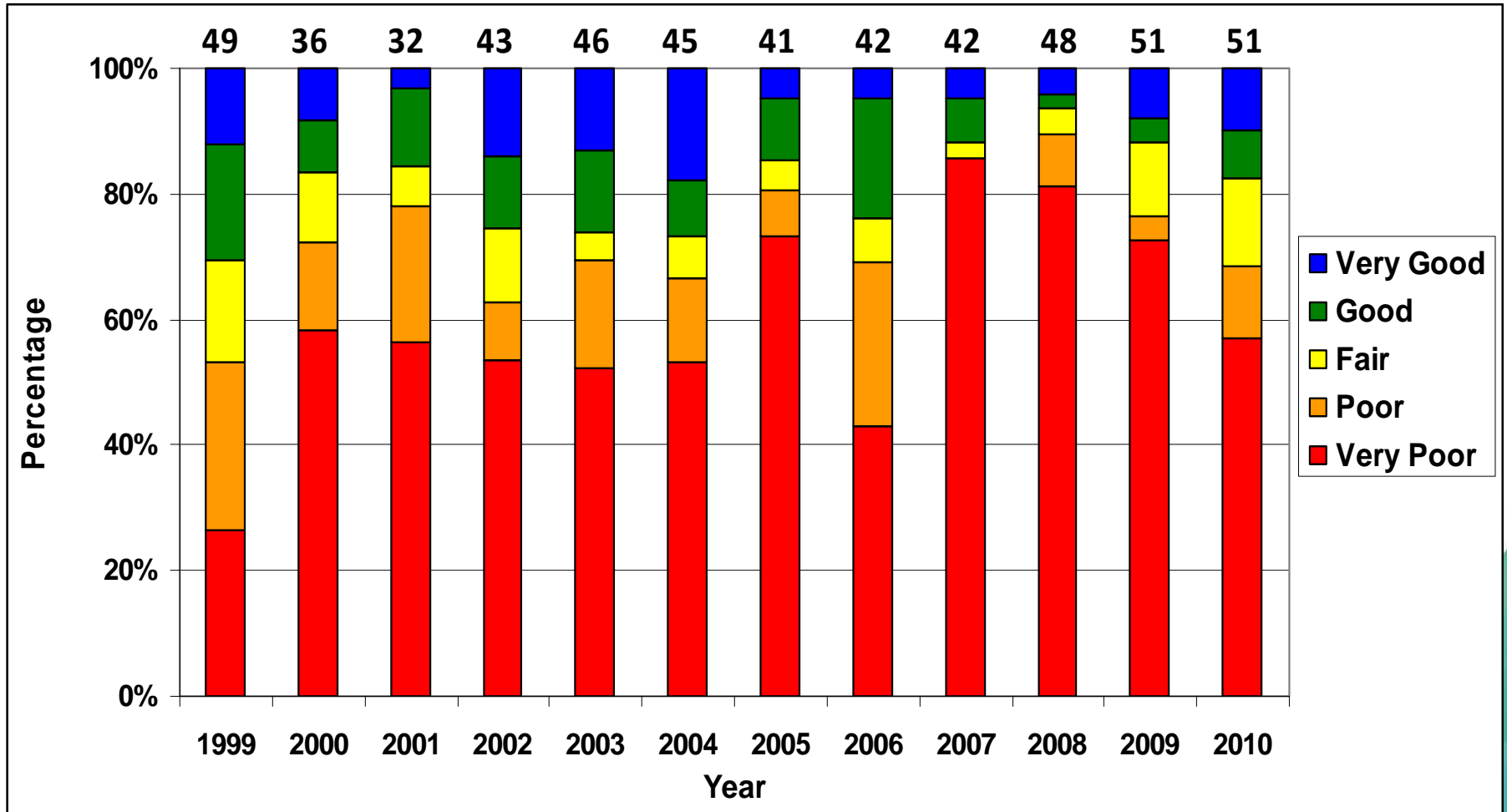
Sensitive to pollution-
presence indicates good
habitat and water quality

Gradual change in dominant taxa as habitat
and water quality decline

Tolerant of pollution-
predominance indicate habitat
and water quality is degraded

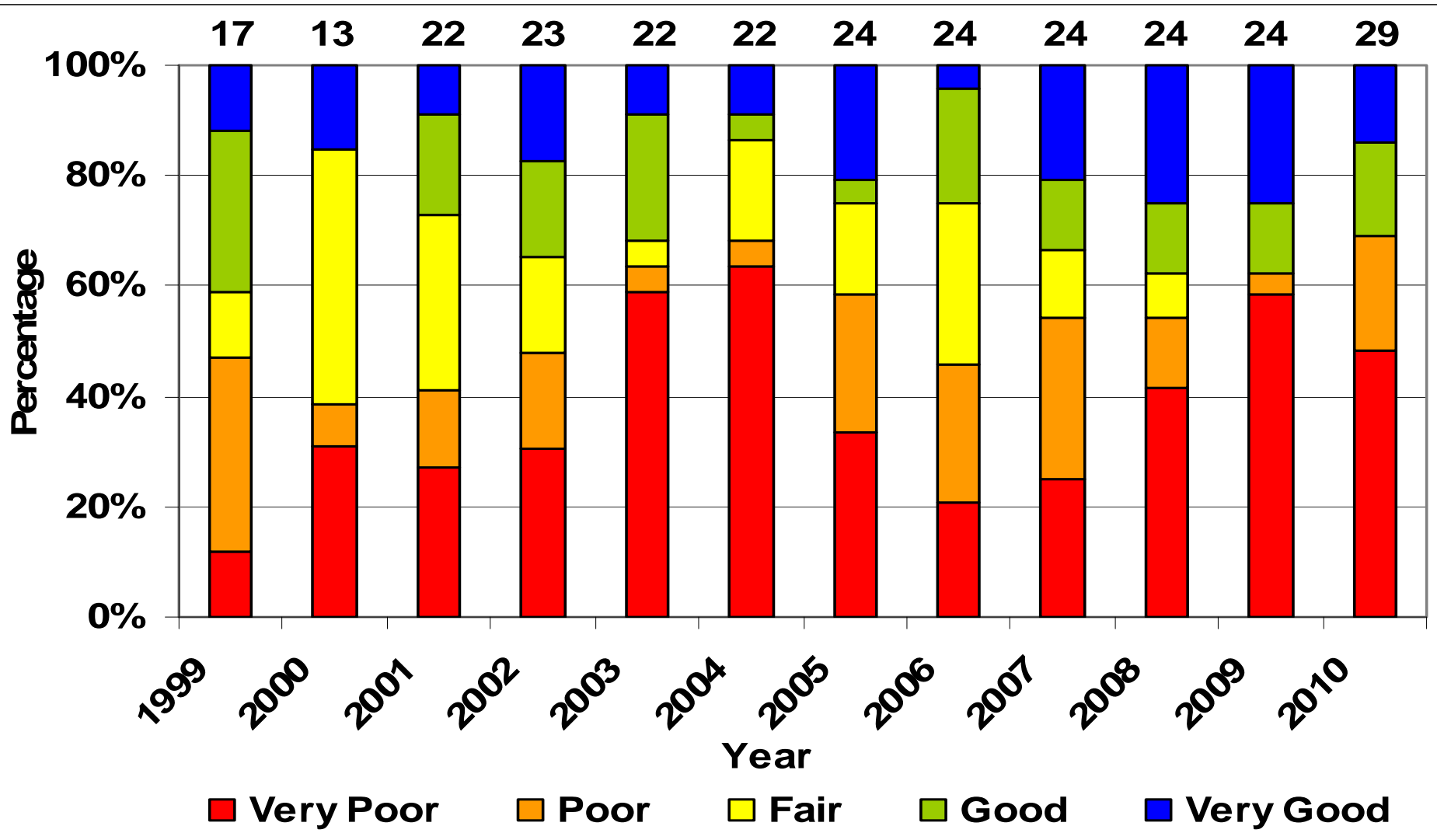


Ecosystem health

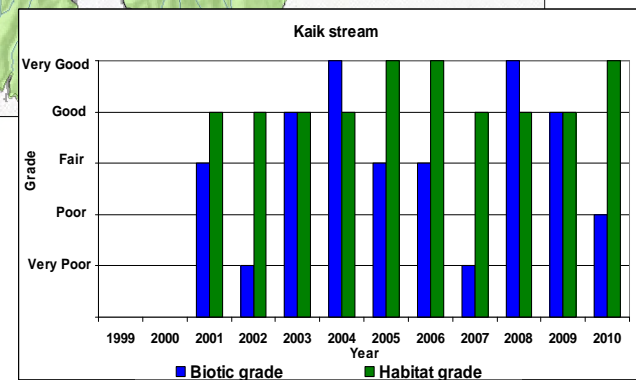
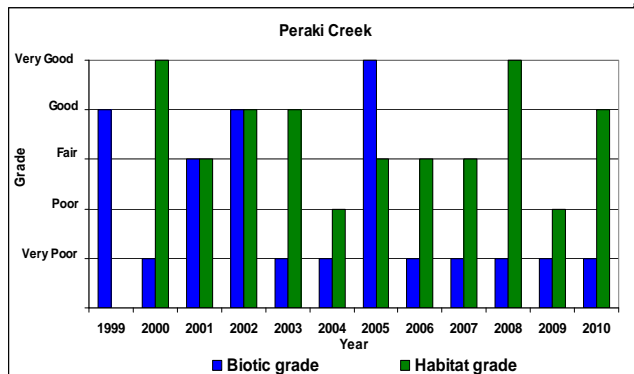
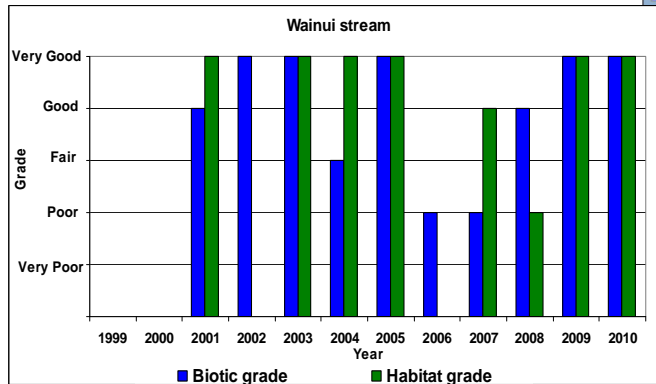
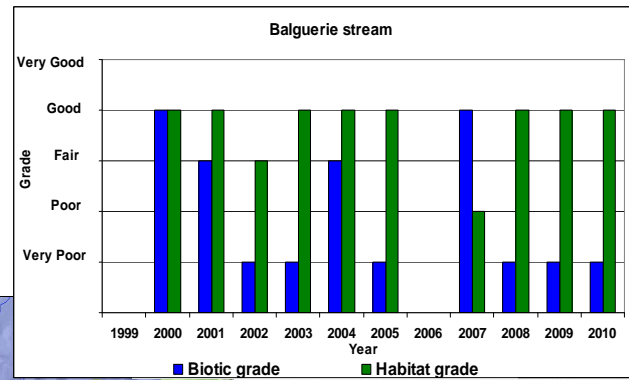
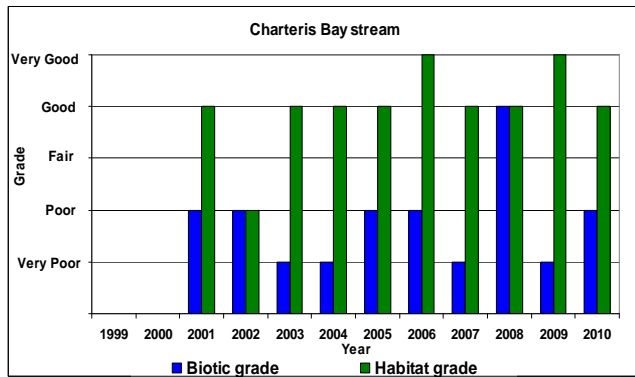


Grades for lowland streams across the region from 1999 to 2010

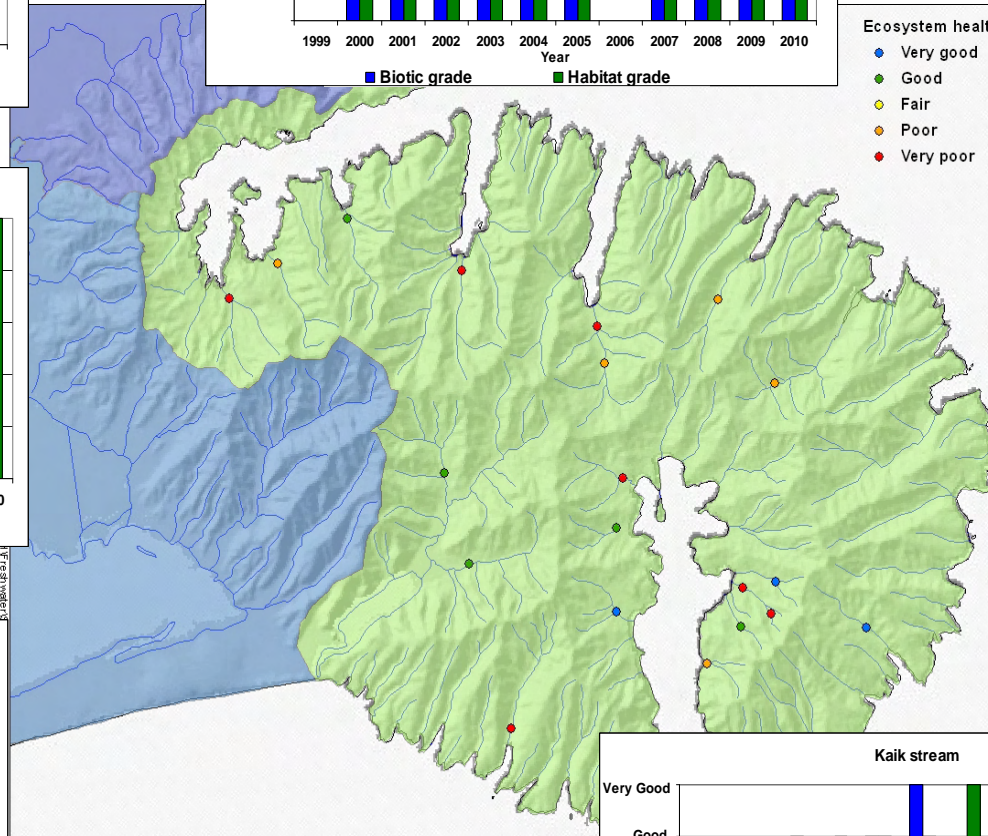
Ecosystem health



Grades for Banks Peninsula streams across the region from 1999 to 2010



- Ecosystem health grade 2010-11
- Very good
 - Good
 - Fair
 - Poor
 - Very poor



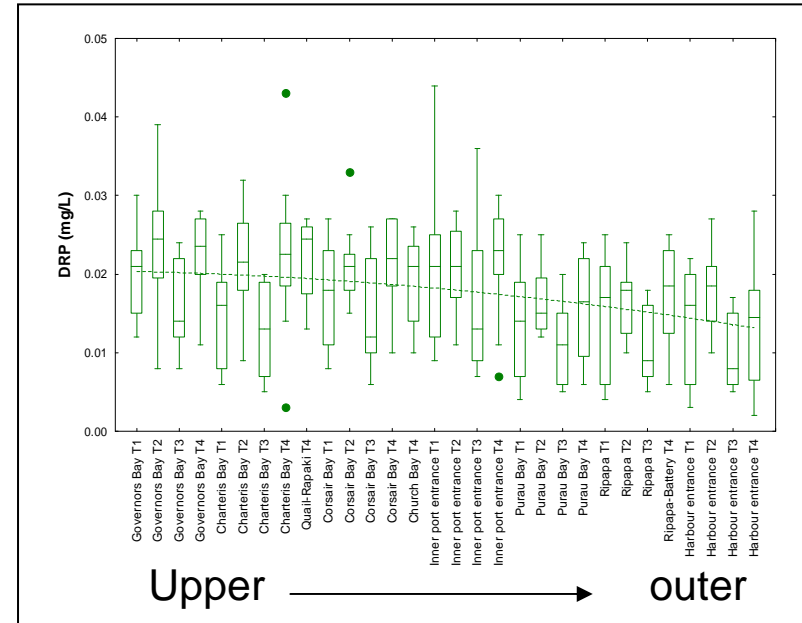
Banks Peninsula zone ecosystem health monitoring sites

Lyttelton Harbour water quality

DOWN THE HARBOUR

No pattern in NH_3N and NNN concentrations down the harbour

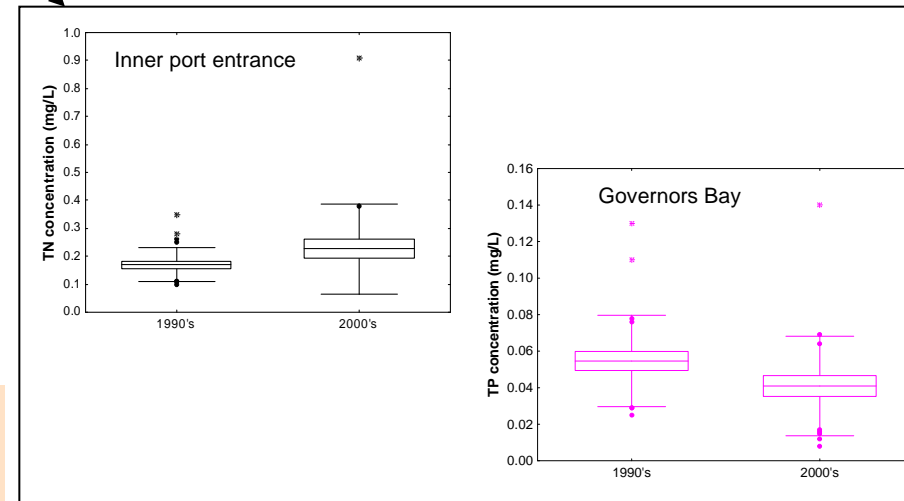
DRP, TP, turbidity and TSS concentrations decrease down the harbour



OVER TIME

TN concentrations at the inner port entrance were significantly higher in the 2000's (mean 0.227 mg/L) than in the 1990's (mean 0.17 mg/L).

DRP and TP concentrations were significantly lower at some sites in the 2000's than in the 1990's



Sediment is a significant issue for the harbour water and seabed

Akaroa Harbour water quality

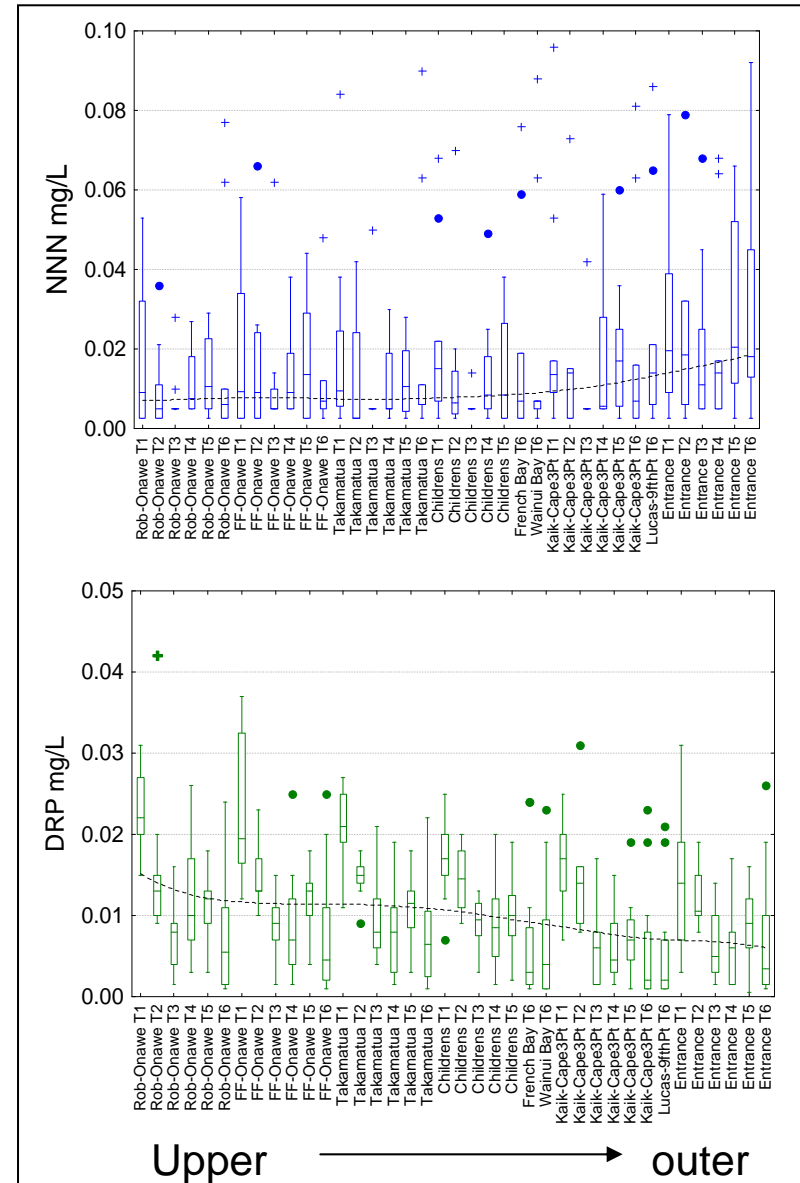
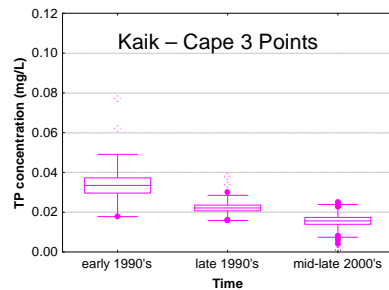
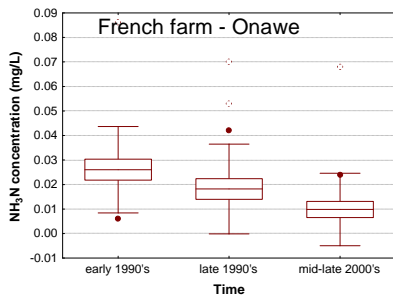
DOWN THE HARBOUR

TP, DRP and turbidity concentrations decrease down the harbour.

NNN concentrations typically lower in the upper than the outer harbour.

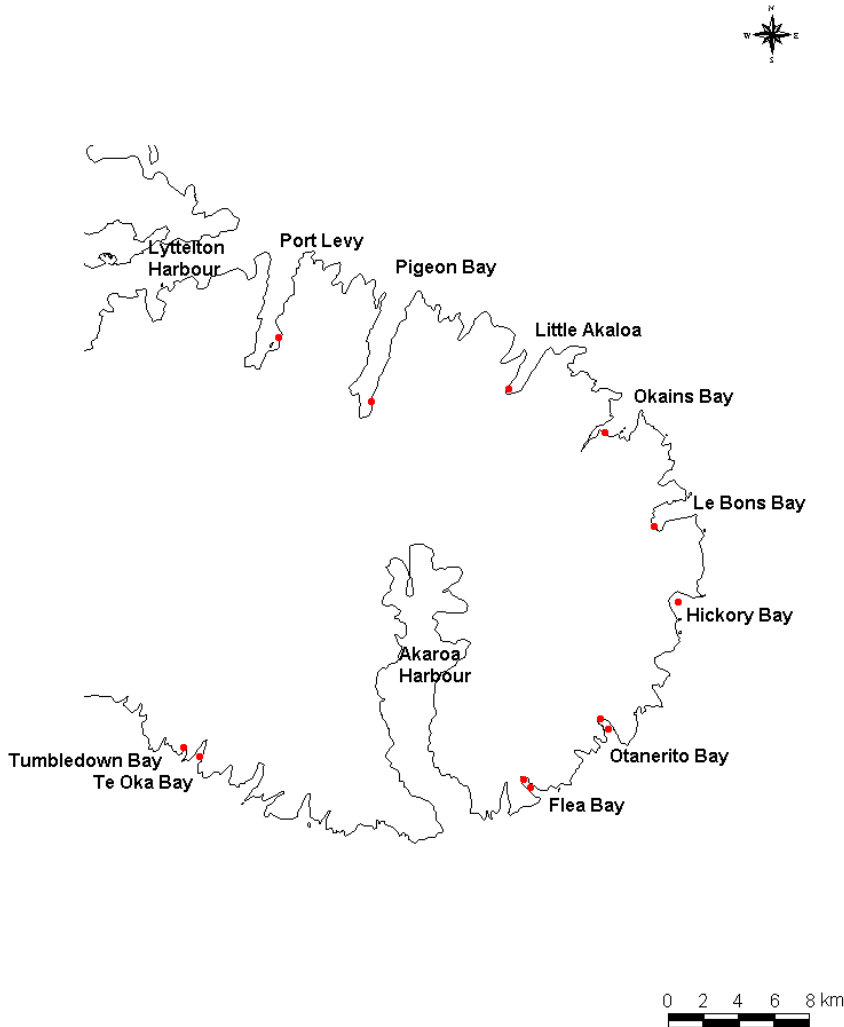
OVER TIME

For NH_3N , DRP and TP there was a significant decrease in concentrations between time periods at many sites



Upper → outer

Around the bays water quality

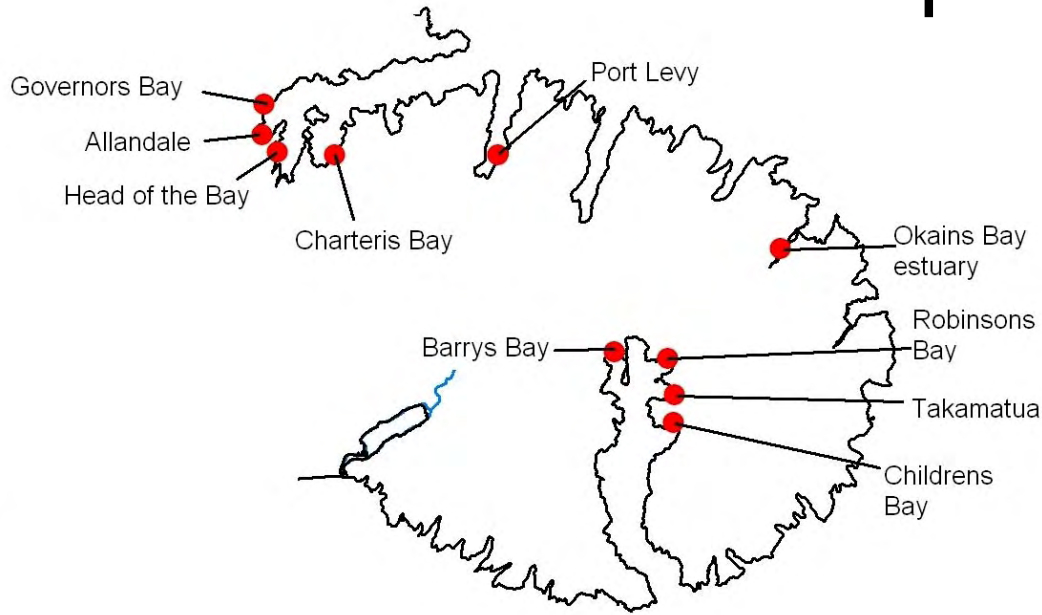


Rainfall has a significant impact on nearshore NNN and TSS concentrations.

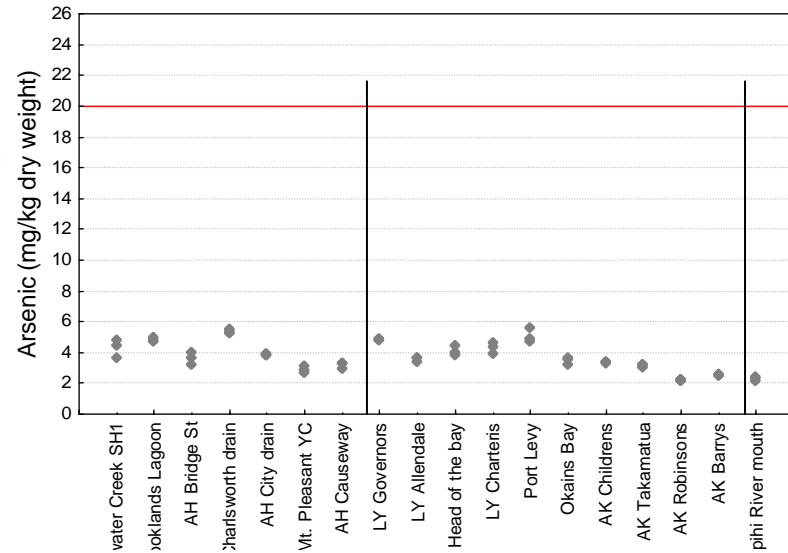
Notable high concentrations of NH_3N , NNN, TN and TP occurred after heavy rainfall.

High flows in the Rakaia River reduce the salinity of the water in the southern bays, and is also likely to influence other water quality parameters.

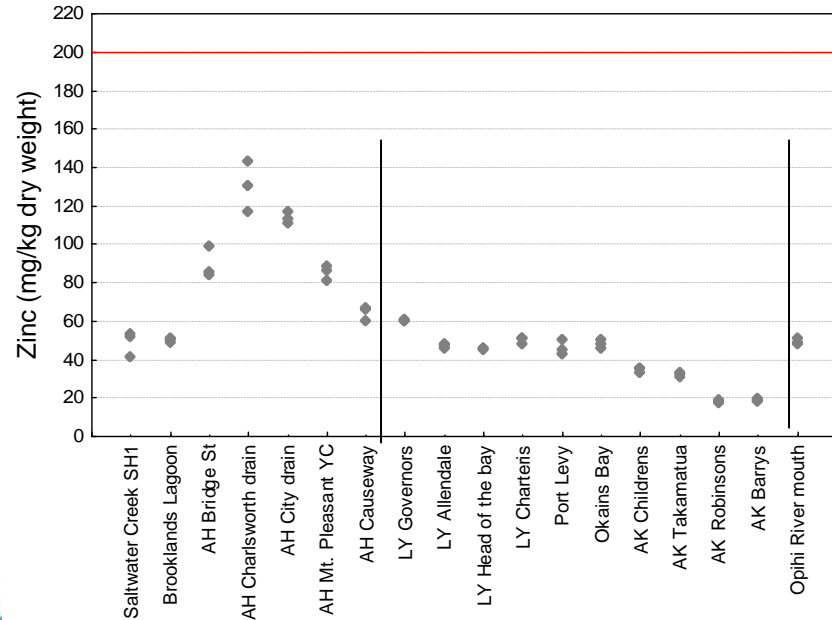
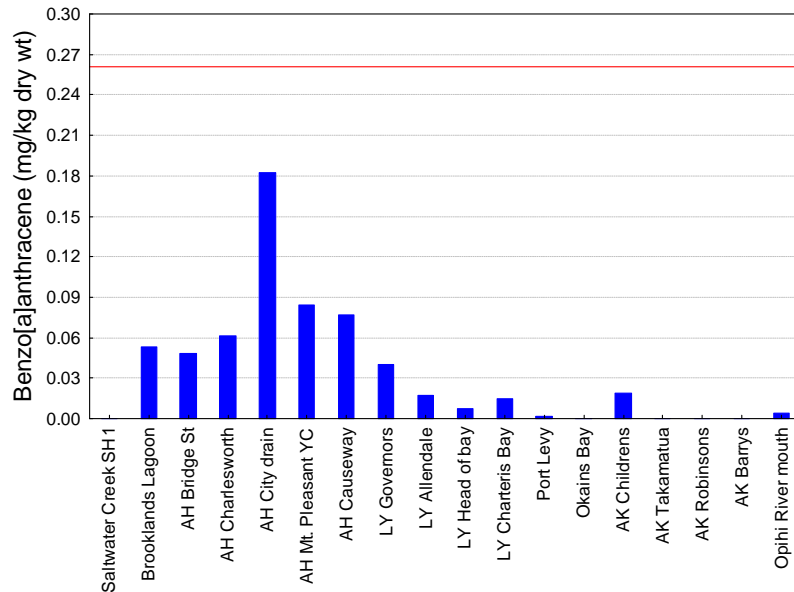
Sediment quality - 2010



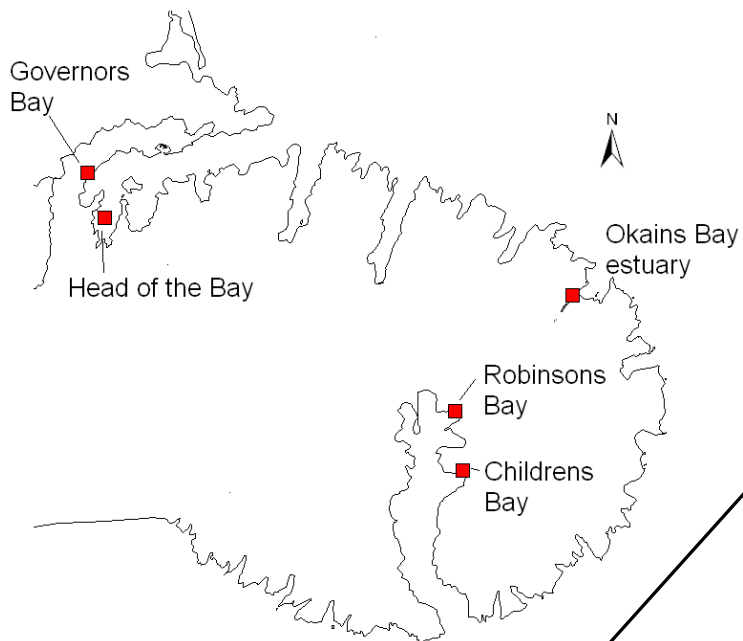
METALS



HYDROCARBONS



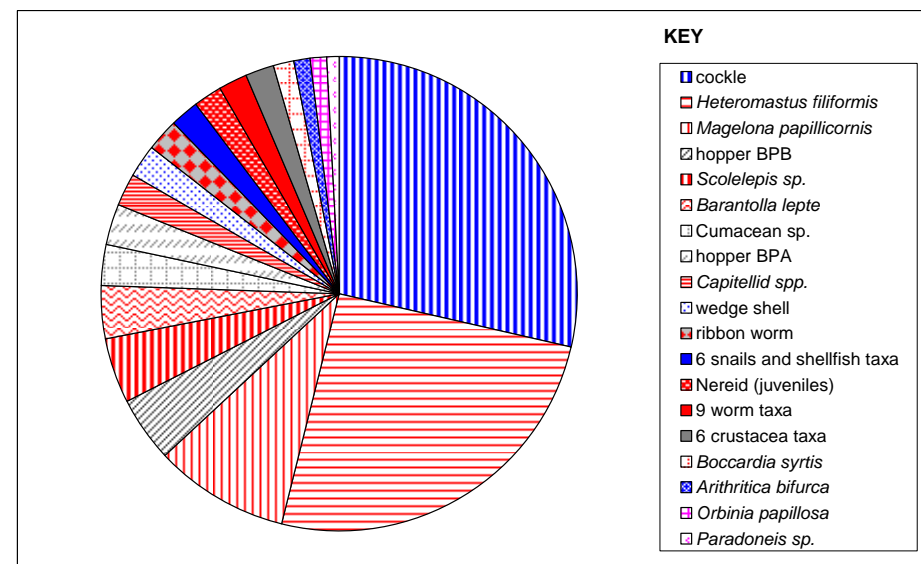
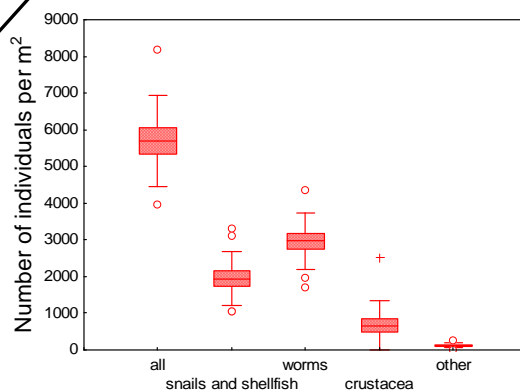
Annual evaluation of selected intertidal mudflats



CHILDRENS BAY 2009

SEDIMENT GRAIN SIZE				
	CLAY	SILT	SAND	GRANULE
	% of sample	% of sample	% of sample	% of sample
Sample 1	0	2	98	0
Sample 2	0	1.5	98.5	0
Sample 3	0	1.8	98.2	0
Sample 4	0	2	97.1	0.9

SEDIMENT CHEMISTRY				
	ORGANIC MATTER	TOTAL PHOSPHORUS	TOTAL NITROGEN	CHLOROPHYLL-A
	g/100g dry wt	mg/kg dry wt	mg/kg dry wt	mg/kg
Sample 1	1.3	420	< 500	3.7
Sample 2	1.4	440	< 500	4.5
Sample 3	1.4	600	< 500	3.1
Sample 4	1.3	470	< 500	2.5



Banks Peninsula Biodiversity

and the

Canterbury Water Management Strategy



Outline

- Biodiversity -- Importance
- Biodiversity in Banks Peninsula Zone
- Threats to Biodiversity
- Planning Tools and Immediate Steps

The information for this plot has been taken from Environment Canterbury records. Every reasonable effort has been made to ensure that the information is accurate. The information contained in this map has been prepared to the best of our knowledge and is not intended to be used for any other purpose.

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What is Biodiversity? (biological diversity)



- Variety of plants and animals, and the places they live:
 - Ecosystems (big or small)
 - Plants, animals and microorganisms interacting
- CWMS Immediate Steps funding is about **indigenous biodiversity**

Canterbury Water Management Strategy - Biodiversity

- Freshwater ecosystems and species they support
 - springs, braided rivers, streams, groundwater, lakes, wetlands
- Dryland ecosystems affected by water use
 - Indigenous forest remnants affected by irrigation/water takes etc
- NOT covered in CWMS for Banks Peninsula
 - Rocky outcrops and associated vegetation communities
 - Upland habitat for lizards/geckos etc
 - Some pockets of native forest remnants

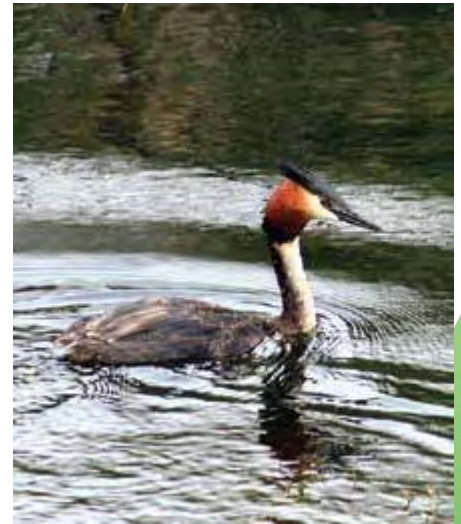
Why is protecting & restoring NZ's biodiversity important?

- Significant contribution to overall global biodiversity
- Biological wealth
 - NZ economy based primarily on use of biological resources and benefits from ecosystem services
- Benefits:
 - Economic
 - Social
 - Cultural



Banks Peninsula Biodiversity

- Very Cool!!
- Unique topography, geology and climate
- Species evolved separately from Canterbury Plains
- Highly endemic
- Southern limits for several species



CCC Biodiversity Strategy – Crested Grebe

Banks Peninsula is very important on a regional, national and international scale for the biodiversity that it supports

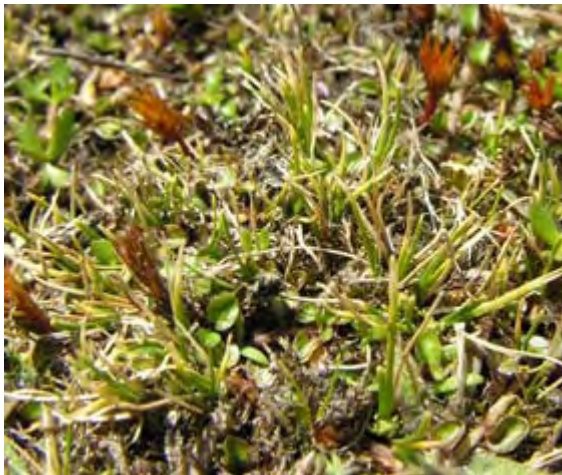
Te Roto o Wairewa (Lake Forsyth)

- Degraded quality
 - Forest cover removal for farming = increased sediment and nutrients
 - Toxic blue-green algal blooms
 - Brackish in southwest, freshwater in northeast
- BUT still has high biodiversity values for flora and fauna:
 - Crested grebe
 - Scaup
 - Eel
 - In the top 10-15 wading sites for NZ migratory birds
(CCC Biodiversity Strategy)
 - Connection through to ChCh wetland areas for wetland and coastal bird species



Te Roto o Wairewa (Lake Forsyth)

- Unique wetland ecological classification ranges from saltmarsh to freshwater lowland marsh
- 7 of wetland plant species listed in the 'Threatened and uncommon plants of NZ' (de Lange, 2009)
 - 'Best site in Canterbury' for *Isolepis basilaris* (pygmy clubrush) (pers comm. Nick Head)
- Wetland flora very sensitive to stock damage



Carol Jensen – mud buttercup



NZ Plant Conservation Network – Sea Holly

Banks Peninsula Streams



CCC Banks Peninsula Landscape Study – Okains Bay and Opara Stream

- Streams a combination of spring fed and rain-fed
- Steep rainfall gradients
- Very high proportion of streams with native vegetation (rare 'source to sea' catchments)
- High native fish and invertebrate diversity
- Many species present are declining nationally

Banks Peninsula Streams

- Provide good habitat for whitebait
 - Koaro (good climbers)
 - Inanga (the main whitebait species)
 - Banded kokopu
- Provide habitat for declining species or species restricted to only a few places in Canterbury
- Sites identified of importance:
 - Narby Stream (very high natural values)
 - Streams in Lyttleton Basin
 - Charteris Bay (highly distinctive)
 - Le Bons Bay
 - Wainui
 - Okuti (threatened plants and runs into nationally important Lake Forsyth)



Freshwater Wetlands – Regional Context

- Total historic extent of freshwater wetlands in Canterbury:
 - approx 195,000 ha (4.3% of the region)
- WONI current regional freshwater wetland GIS layer
 - 19,851 ha (10.2% of the former wetland area)
- Banks Peninsula:

Table 4-1: Historic and current (c. 2000) area of wetlands, % area loss, and number of current wetlands for the 10 Canterbury Water Management Zones, as calculated from Ausseil *et al.* (2008)

Water Management Zone	Historic wetland area (ha)	Current wetland area (ha)	% loss	Number of 'current' wetland sites
Banks Peninsula	241	32	86.7	11

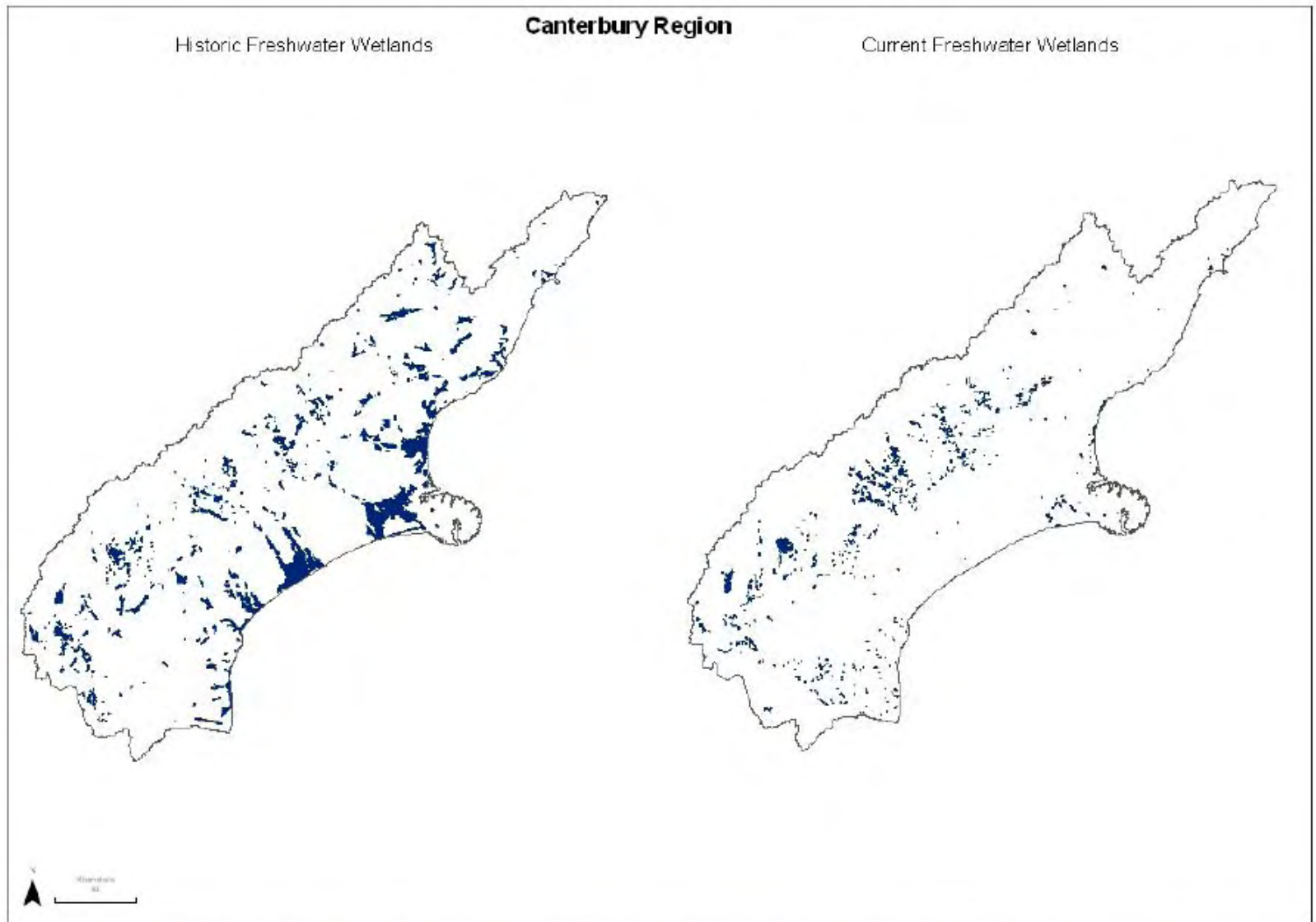


Figure 4-1: Historic and current (c. 2000) extent of freshwater wetlands in Canterbury, derived from Ausseil *et al.* (2008)

Banks Peninsula Freshwater Wetlands

- Low occurrence historically
- Not a lot of studies undertaken on freshwater wetlands aside from Lake Wairewa
- Sites identified of importance:
 - Te Roto o Wairewa
 - mixture of high value swamp, marsh and fen
 - Little Okains
 - French Farm wetland
 - Goughs Wetland
 - Bradley-Herbert complex



Salt Marsh/ Estuaries

- Transition between freshwater and saltwater
- High proportion of coastline = high proportion of this type of habitat
- Not many examples of remaining salt marsh/estuary habitat in Canterbury
- Very important for:
 - migratory and wading bird species
 - flora that the ecosystem support
 - Invertebrates and whitebait spp.

Salt Marsh/Estuaries

- Areas noted of importance:
 - Teddington flats (head of Lyttleton Harbour)
 - Southeast end of Te Roto of Wairewa
 - Head of Akaroa Harbour
 - Okains Estuary
 - Duvauchelle Bay
 - Raupo Bay
 - Le Bons Bay



Marine and freshwater connectivity

- Banks Peninsula coastline unique
 - Many small freshwater catchments draining to sea in a small area
 - Quality of freshwater has impact on marine environment
- Many flora and fauna species inhabit both environments
 - NZ native fish species (diadromous)
- Important whitebait spawning areas
 - Okains Bay stream
 - Le Bons Bay stream
 - Te Kawa Stream, Port Levy



Ecosystem Connectivity

- Christchurch, Te Waihora/Lake Ellesmere & Banks Peninsula
 - Upwards of 100,000 wetland and coastal birds
- Salt marshes contribute to wetland and coastal bird habitat
- Area of Strategic National Importance
 - Te Waihora/Lake Ellesmere, Te Roto o Wairewa/Lake Forsyth, Pices and Kaituna Valleys
 - Contain diversity of ecosystems ranging from lowland forest to national priority wetlands and dunelands



CCC Banks Peninsula Landscape Study – Teddington Flats at head of Lyttelton Harbour

Department of Conservation land



Key Threats to Biodiversity

- Habitat fragmentation
 - Birds, fish, plants, insects, herpetofauna
 - Freshwater quality
 - Marine ecosystems
- Plant and animal pests
- Land use changes
 - Intensification of land use
 - “Lifestyle” land owners

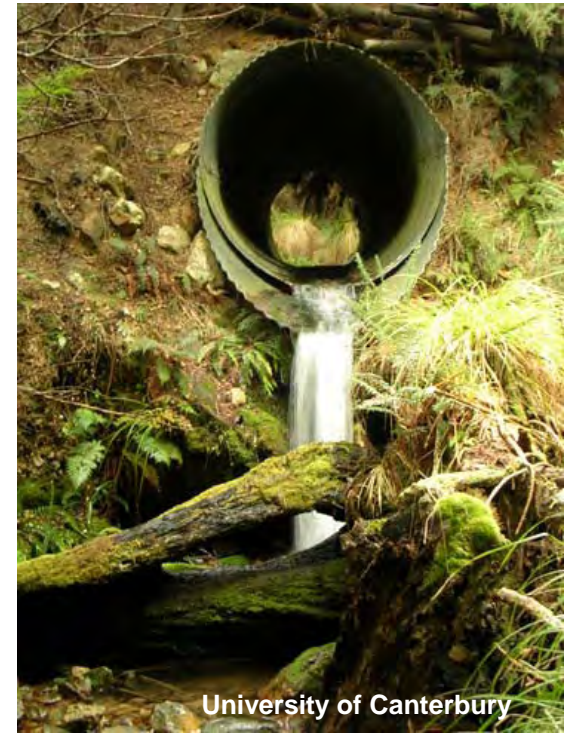


Banks Peninsula Conservation Trust – Annelies Pekelharing
Banana Passionfruit pulling



Threats to native fish diversity

- Pastoral agriculture and dairy farming
 - Eutrophication
 - Drainage and channelisation
 - Livestock disturbance of streams
- Flood works
- Barriers to fish movement/migrations
- Predation by salmoniids???
- Fragmentation/removal of habitat



So where does the Zone Committee fit in?



Goals and Targets

- Set of goals and targets in Annex G of CWMS
 - From 2010
 - By 2015, 2020 and 2040
- Held accountable to these goals/targets

Water Resources	Biodiversity Outcomes	Management Actions
<p><u>Banks Peninsula and Kaikoura streams:</u></p> <p>Streams and rivers on the Banks Peninsula and at Kaikoura have the best native fish diversity in the Eastern South Island, and contain endemic invertebrate species. High habitat values of peninsula streams may reflect the extent of riparian vegetation along many waterways</p>	<p>Maintain or enhance habitat values for native fish and aquatic invertebrates. Improve water quality</p>	<p>Actions</p> <ul style="list-style-type: none"> • Revegetation of margins, particularly in lower catchments. • Remove barriers to fish passage e.g. road culverts, weirs, and dams. • Restoration/ translocation Banks Peninsula is a priority site <p>Planning</p> <ul style="list-style-type: none"> • Set environmental flows that maintain flow variability, and avoid takes that individually or cumulatively abstract a large proportion of stream flow

Dual Approach needed:

1. Improved planning frameworks
2. Action on the ground (Immediate Steps Programme)

What are 'Improved Planning Frameworks'?

A **long term** strategic approach to biodiversity goals:

- Setting environmental flow limits for surface water bodies
- Avoid structures that impede fish passage/alter channel forming processes
- Framework for preventing further loss of wetlands
- Catchment nutrient budgets
- Setting water quality standards/catchment contaminant load limits
- Industry Initiatives
- Future development restrictions/requirements
- Community Initiatives/programmes
- Education

What is 'Immediate Steps'?

A **short term** incentives scheme (2015):

- 'Kick Start' to ensure CWMS 'biodiversity' targets/goals realised
- Accelerate the **protection** and **restoration** of Canterbury's freshwater ecosystems and associated indigenous biodiversity
- Facilitate understanding of the biodiversity implications of freshwater management decisions

*Follows principles of Biodiversity Strategy: **Protect** what we have first then **restore** what has been lost ('Bang for Buck')*

Immediate Steps Funding

How much?

\$10 million dollar investment over 5 years:

- 2/3 rates, 1/3 external sources
- \$2 million regionally each year:
 - Approx. \$100,000/year for each zone committee to allocate
 - Approx. \$250,000/ year for the regional committee to allocate

Next meeting – Robyn!

- Immediate Steps
 - History on BP to date
 - Committee's preferred approach
 - Other Zone Committees – what they have done
- What do you want to know that Robyn can bring to next meeting?