

Pathway for the Pomahaka

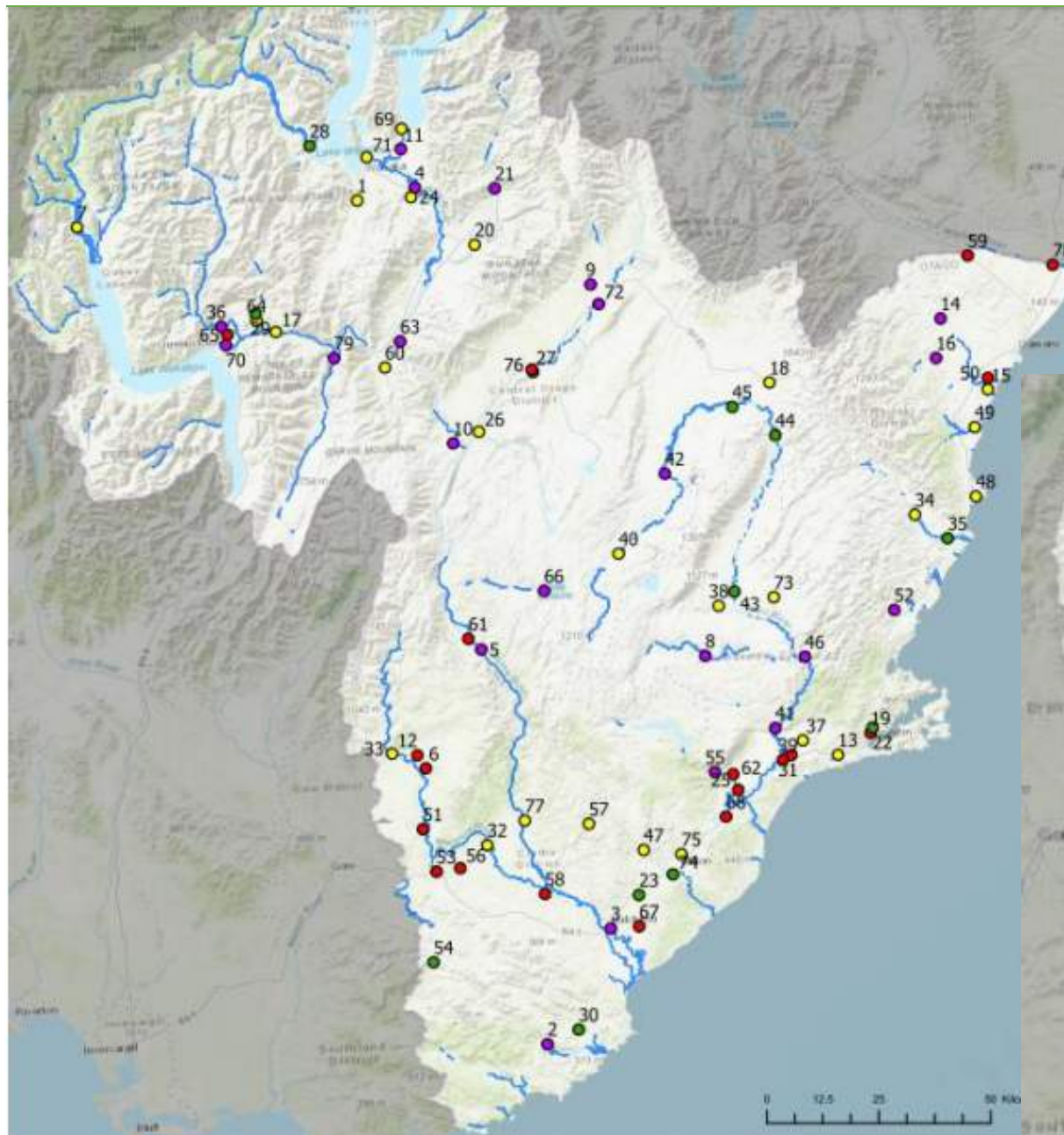
Craig Simpson

NZ Landcare Trust

- Promote sustainable land and water management
- Funded by MfE
- Contestable funds





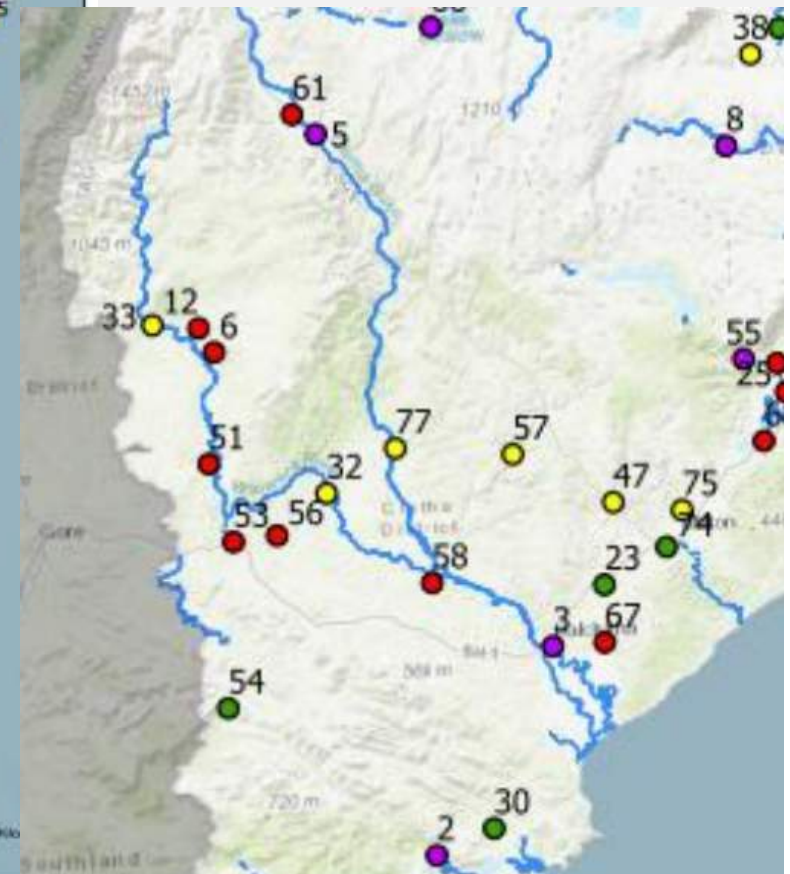


Water Quality 2012 to 2017

- Excellent
- Fair
- Good
- Poor

Water Quality in Otago 2012 to 2017

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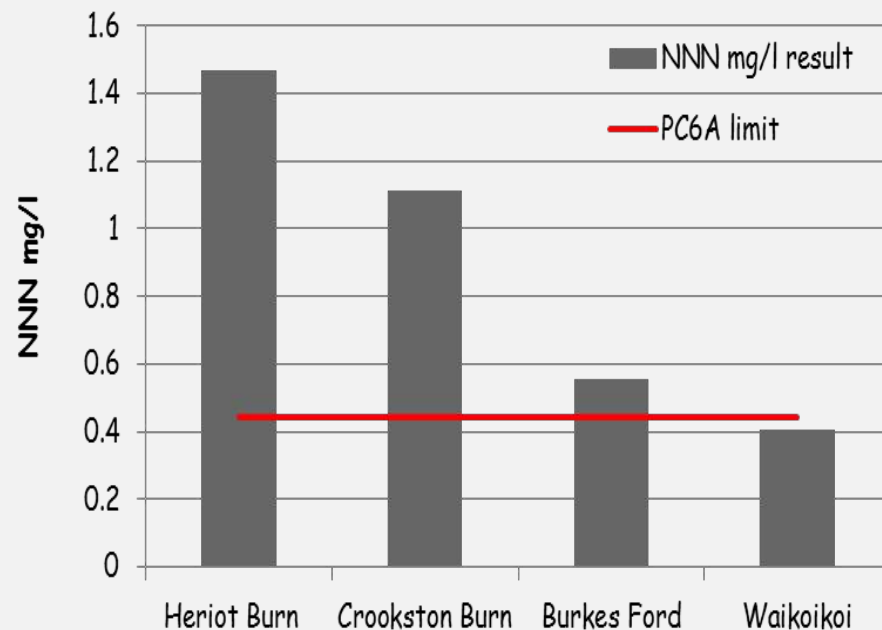
Number			NNN	NH ₄ -N	DRP	<i>E.coli</i>	Turb.	TN	TP
on map	Group	Site	mg/l	mg/l	mg/l	cfu/100ml	NTU	mg/l	mg/l
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19	1	Leith at Dundas Street Bridge	0.470	0.014	0.028	626	2.220	0.612	0.042
22	1	Lindsays Creek at North Road	0.720	0.023	0.024	980	3.300	0.900	0.042
23	1*	Lovells Creek	0.680	0.023	0.018	550	3.700	0.960	0.043
3	1	Owaka at Katea Rd	1.200	0.019	0.025	520	3.200	1.500	0.050
30	1*	Pomahaka at Burkes Ford	0.554	0.019	0.015	150	3.140	0.848	0.036
32	1*	Tokomairiro at Black Bridge	0.370	0.028	0.032	960	4.200	0.630	0.062
74	1	Tokomairiro at Lisnatunny	0.270	0.023	0.022	420	4.000	0.460	0.050
75	1	Tokomairiro at West Branch	0.260	0.013	0.016	320	2.800	0.530	0.038
47	1	Tuapeka	0.157	0.019	0.034	224	4.220	0.388	0.064
77	1	Waikoikoi at Hailes Bridge	0.448	0.023	0.038	1140	5.640	0.802	0.077
51	1	Waipahi at Cairns Peak	0.742	0.035	0.019	884	8.160	1.244	0.068
53	1	Waipahi at Waipahi	1.124	0.017	0.020	294	3.080	1.408	0.048
54	1	Wairuna at Millar Road	1.268	0.059	0.100	1220	11.620	1.784	0.170
56	1	Waitahuna at Tweeds Bridge	0.148	0.016	0.018	372	4.000	0.474	0.047
57	1	Waiwera at Maws Farm	0.858	0.020	0.031	380	3.920	1.192	0.060

Evolution

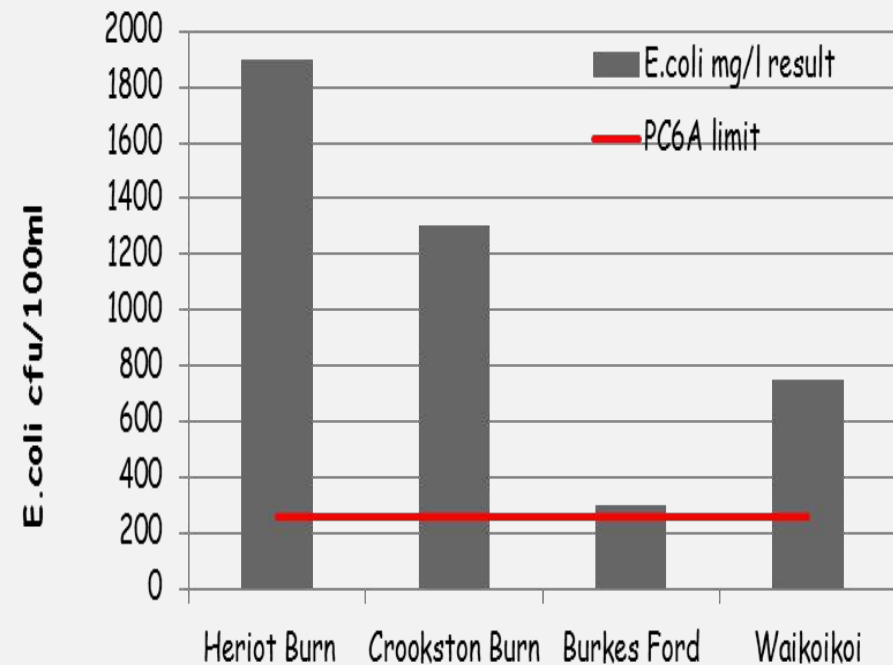
- Initial funding 2013 - ORC
- Farmers got together 2014

2014 Results

**NNN in the Pomahaka catchment
compared to Schedule 15 PC6A limits**



***E.coli* in the Pomahaka catchment
compared to Schedule 15 PC6A limits**



Pathway for the Pomahaka project

- Three year project July 2015 – June 2018
- Aim:
 - Connect industry with farmers
 - Showcase industry tools
 - Improve water quality
 - Promote good management practices
 - Support the Pomahaka Water Care Group

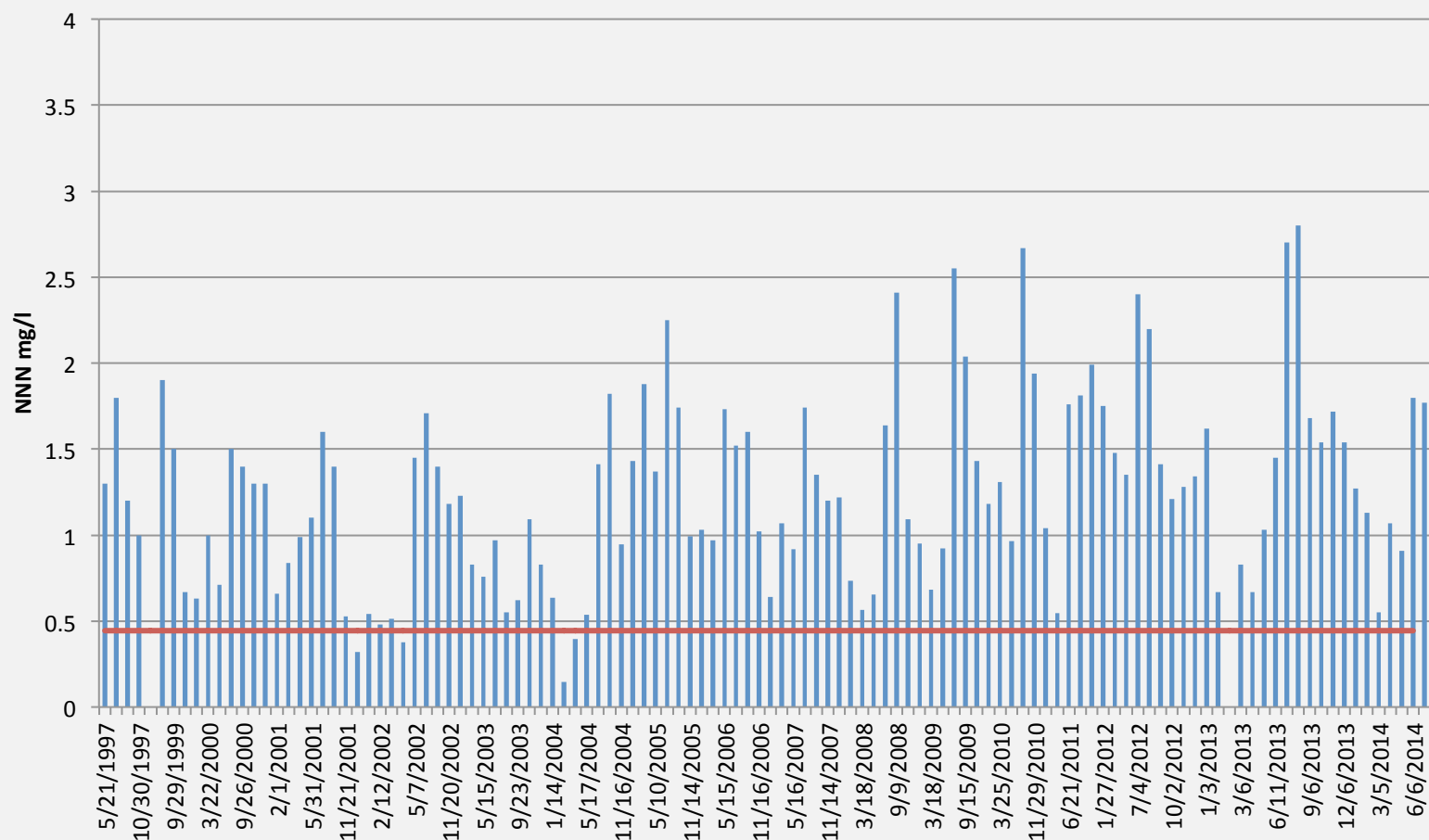




Know what is in our waterways

Not a new problem

**Heriot Burn at Parkhill Road
Nitrite/Nitrate Nitrogen**



All farm types

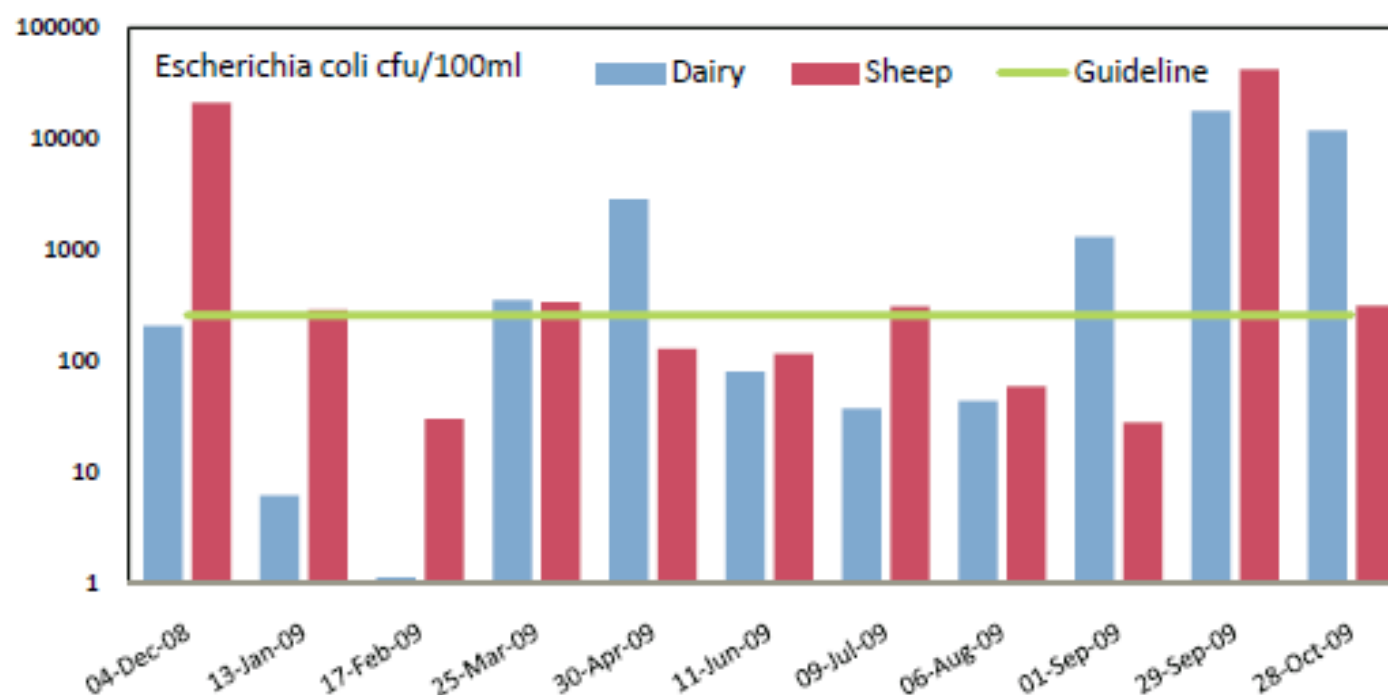
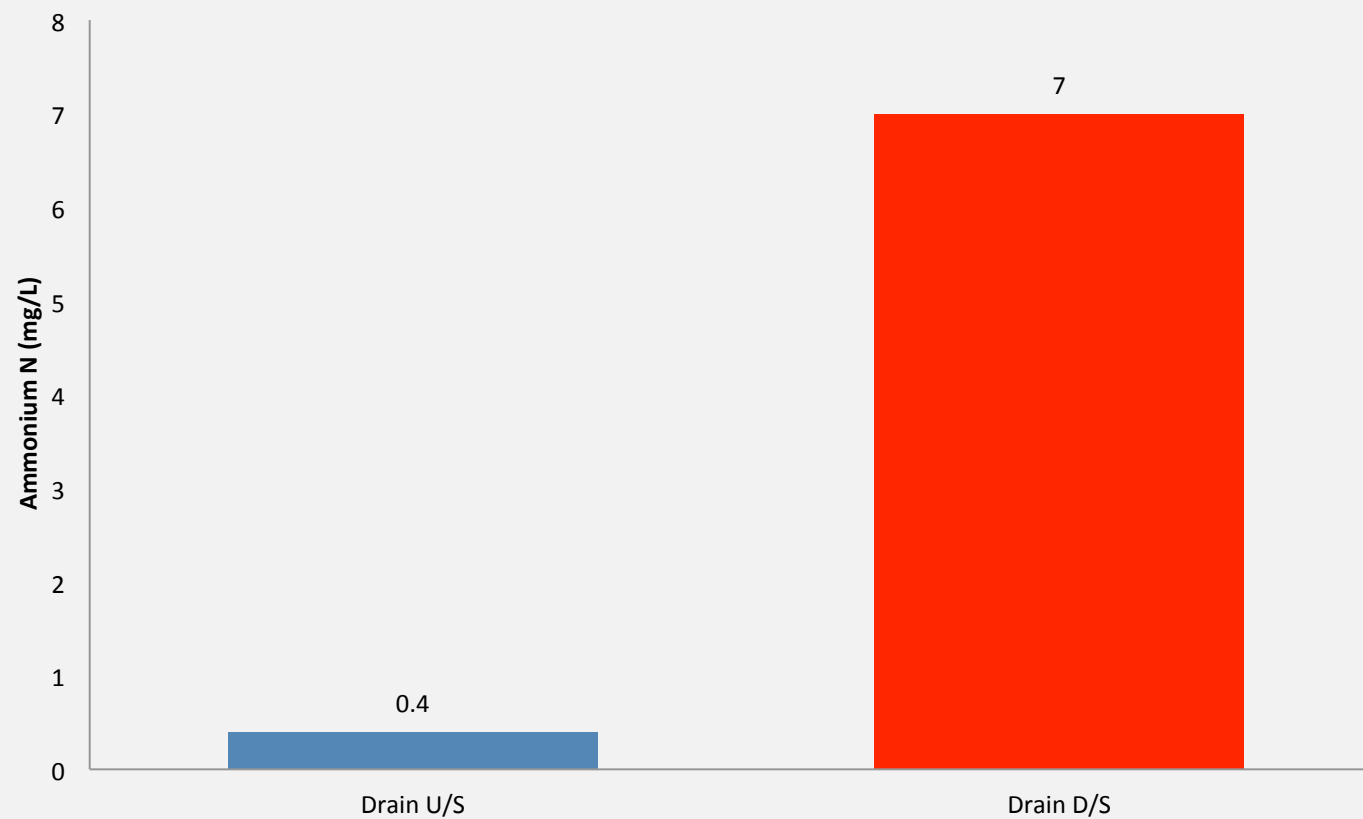


Figure 4-9 Median *E.coli* concentration for each sampling occasion

Effect of Spreading Fertiliser too close to Drain





Know what your business is contributing

Hot spots

- Ensure sludge stacks are at least 50 metres from waterways, and any leachate coming from the sludge stack is collected.
- Recycle plastic waste from the farm.
- Ensure any offal holes or rubbish pits are at least 50m from a waterway and there is no seepage to groundwater.
- Septic tanks should be regularly emptied and well maintained.



Erosion control

- Plant trees on slopes where there is the greatest risk of erosion.
- Retain vegetation cover in gullies to reduce erosion and provide filtering of any runoff.
- Avoid cultivation of areas susceptible to erosion.



Bank Slumping

- Plant trees on stream margins that will help stabilise banks.
- Keep fencing well back from waterways so that bank erosion is reduced and to allow for changing directions in streams.



Paddock selection for wintering

- Identify winter grazing paddocks early.
- Ideally select paddocks further away from waterways.
- Look for areas at lower risk of pugging and compaction.
- Identify critical source areas and leave these in grass.
- Select paddocks where you can manage sediment loss.



Winter intensive grazing

- Work out an access and grazing strategy before putting up fences, thinking about the location of stock water troughs and using temporary water troughs if necessary.
- Graze paddocks from the top to the bottom.
- Keep the soil on the paddock.
- Retain a buffer zone along any riparian areas.
- Graze critical source areas last and only if conditions allow.



Critical Source Areas

Critical source areas are low-lying parts of farms such as gullies and swales where runoff accumulates.

- Runoff from critical sources areas can carry sediment and nutrients to waterways.
- Where possible keep critical source areas uncultivated and ungrazed.
- By managing these areas we can greatly reduce the loss of sediment and nutrients from farms.



Good Management Practices

PATHWAY FOR THE POMAHAKA CATCHMENT PROJECT

Good management practices are:

- Practices which help manage farm resources while minimising environmental risk.

There are many positive outcomes from adopting good management practices on farm, for example:

- Water quality will be maintained and/or improved.
- Water quality provisions in the Otago Water Plan will be easier to comply with.

- There are likely to be economic benefits because of improvements in pasture growth and quality.

The sections included in this poster are suggested and recommended practices for managing water quality contaminants.

Resources

Dairy NZ (2016) Good Management Practices (Report DN240-040). Hamilton, New Zealand

https://www.dairy.co.nz/media/2016/04/GoodManagementPractices_April_2016.pdf

Dairy NZ (2015). Wintering on Crops in the South Island (Report DN240-015, Version 2 - January 2015). Hamilton, New Zealand

<https://www.dairy.co.nz/media/2015/08/08/WinteringOnCropsInTheSouthIsland.pdf>

Matrix of Good Management Governance Group. (2015). Industry-agreed Good Management Practices relating to water quality (Version 2 - 18 September 2015). Christchurch, New Zealand

http://www.owg.govt.nz/publications/MGM_TechnicalReports/IndustryAgreed_GoodManagementPractices_MGM_2015.pdf

Otago Regional Council (N.D.) Do these first - Southwest Otago Water Quality. Dunedin, New Zealand

<http://www.owc.govt.nz/Documents/Publications/FarmingGoodOtagoLandUseManagement/DoTheseFirstDoThisFirstSouthWestOtagoWaterQuality.pdf>



Project website: www.landcare.org.nz/RegionalFocus/Core-Office/Pomahaka-Project

Facebook page: www.facebook.com/PomahakaCatchmentProject

Stock Management

- Fence all stock out of waterways where possible.
- Feed supplements and locate water troughs away from waterways and critical source areas.
- Avoid pugging and soil compaction.
- Ensure deer wallows do not run into waterways.
- Fence off all pressure points.



Effluent Management

- Make sure effluent is not applied directly to, or within 50 metres of a waterway.
- Use low rate effluent applicators, over a large area to capture the benefits of the nutrients.
- Ensure there is no ponding or runoff.
- Document the farm's plan for effluent management including application conditions, rate and time.
- Have sufficient effluent storage - some parts of the catchment need at least 90 days.
- Check your pond does not leak by getting a drop test done.
- Know where your tile drains are and try to avoid application over them.



Infrastructure

- Regularly used stock crossings over waterways should have either a culvert or bridge in place.
- Manage farm tracks, gateways, water troughs, self-feeding areas, stock camps, wallows and other sources of run-off to minimise risks to water quality.
- Maintain races so that effluent goes into a paddock and not a waterway.
- Ensure all effluent run-off is collected from stock handling facilities.
- Ensure all crossings have a lip or bund on the edge so stock waste and mud cannot enter a waterway.



Fertiliser Application

- Only apply when conditions are suitable i.e. avoid times when soil temperature is too low.
- Don't apply when heavy rain is forecast.
- Keep well away from waterways.
- Avoid application to critical sources areas.
- Only apply fertiliser that can be used by the crop or pasture (test soils to check nutrient status).
- Little and often is better than lots now and then.



Biodiversity

- Understand the values of your native area before you change anything.
- Manage or retire wetlands, bogs and swampy areas.
- Protecting native bush can help preserve streams and improve water quality.
- Manage weed and animal pests.



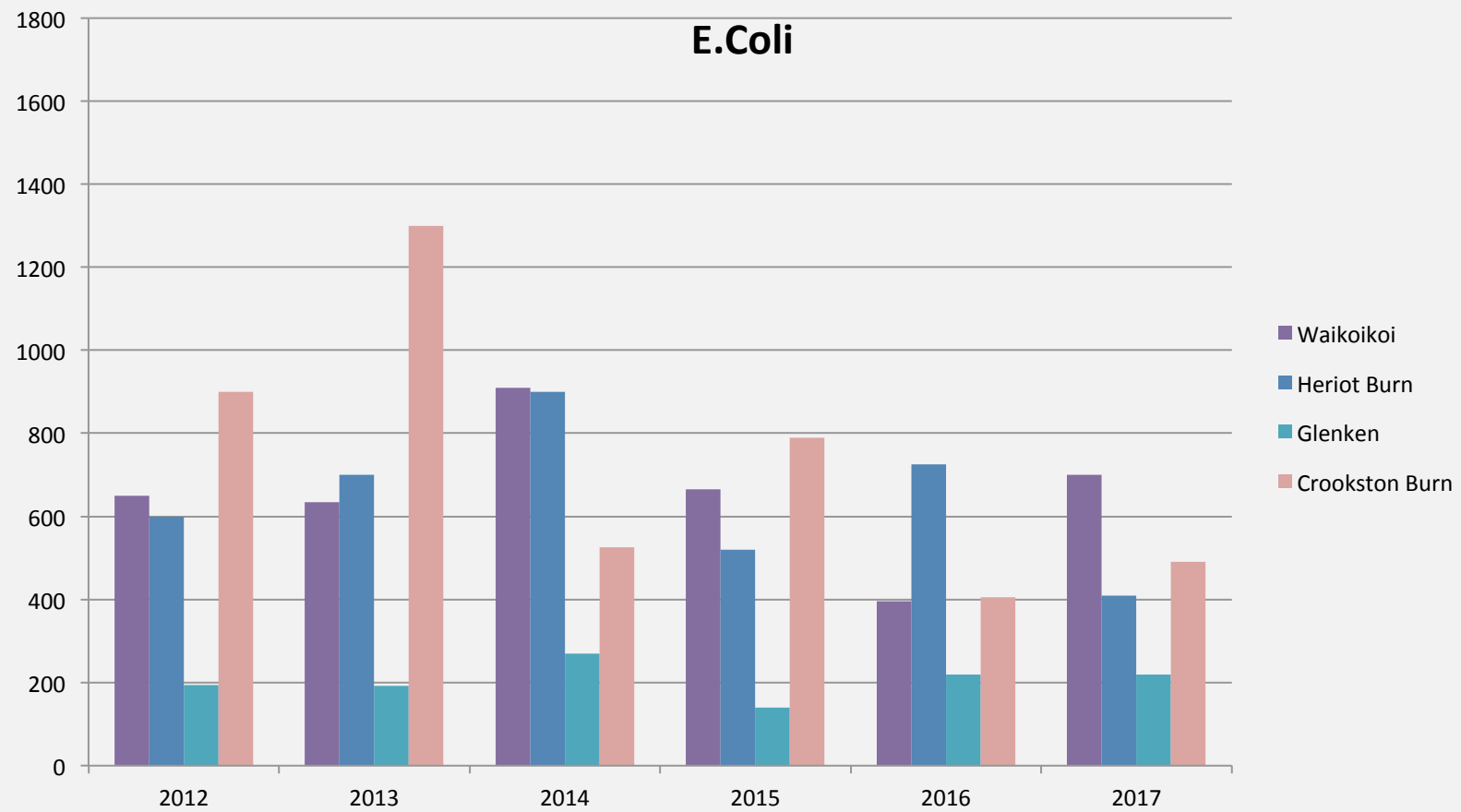
Riparian Management

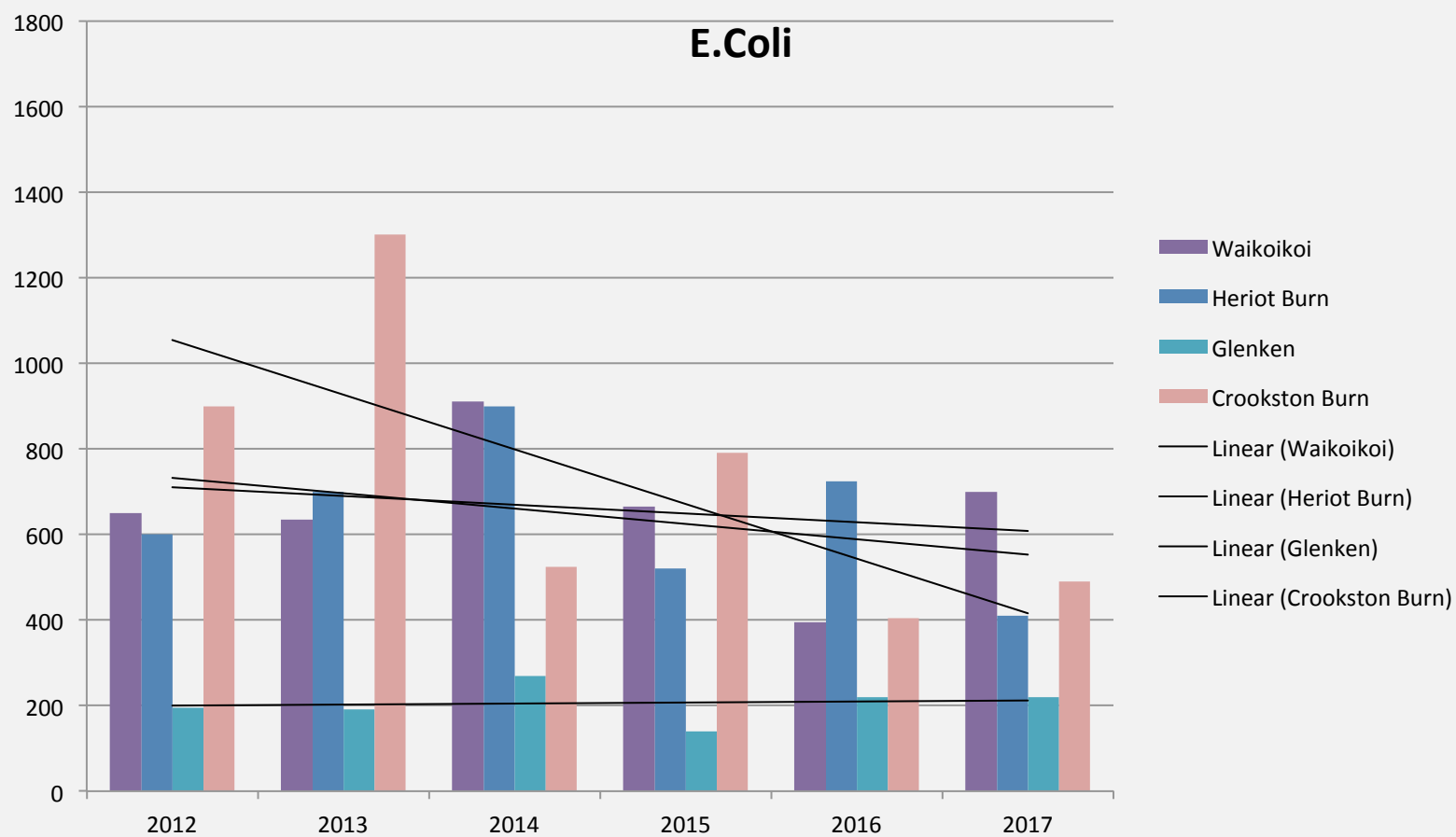
- Keep riparian margins wide enough to filter sediment from any run-off.
- Prioritise areas to protect by fencing and planting.
- Consult your local nursery for advice on the best species to plant in your area.
- Plant trees for shade on north side of streams.
- Long grass can be a very effective filter.

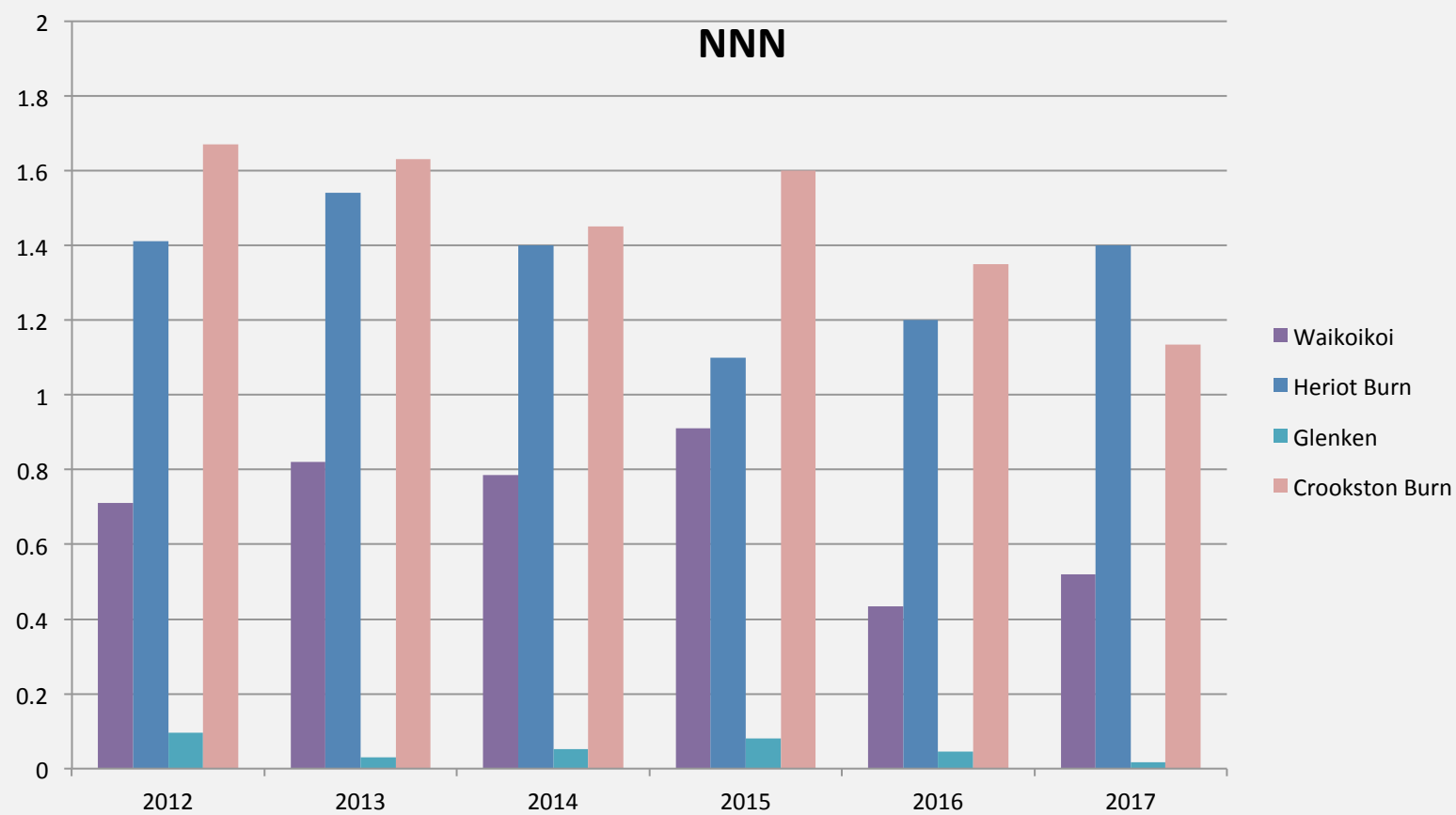


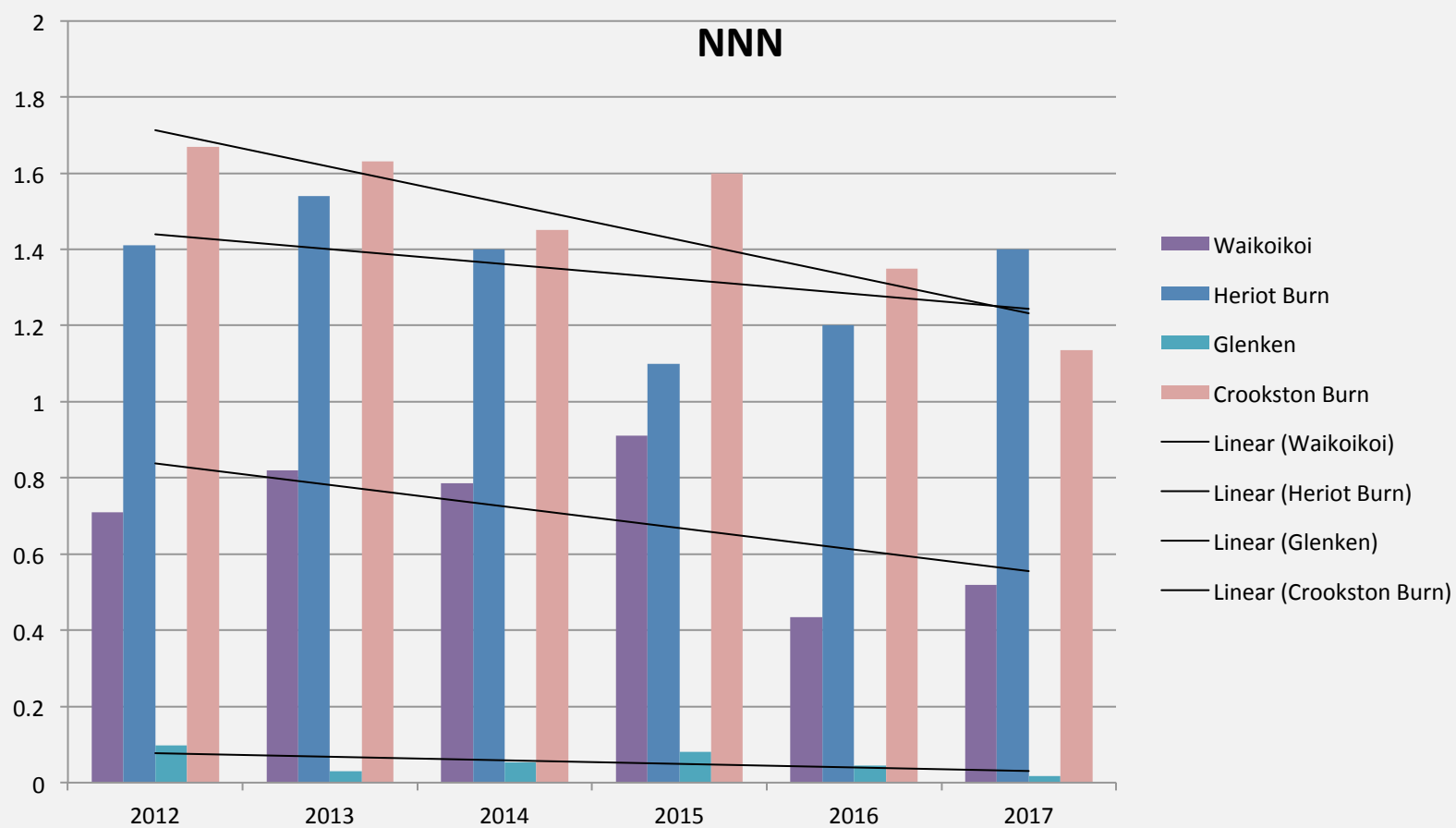


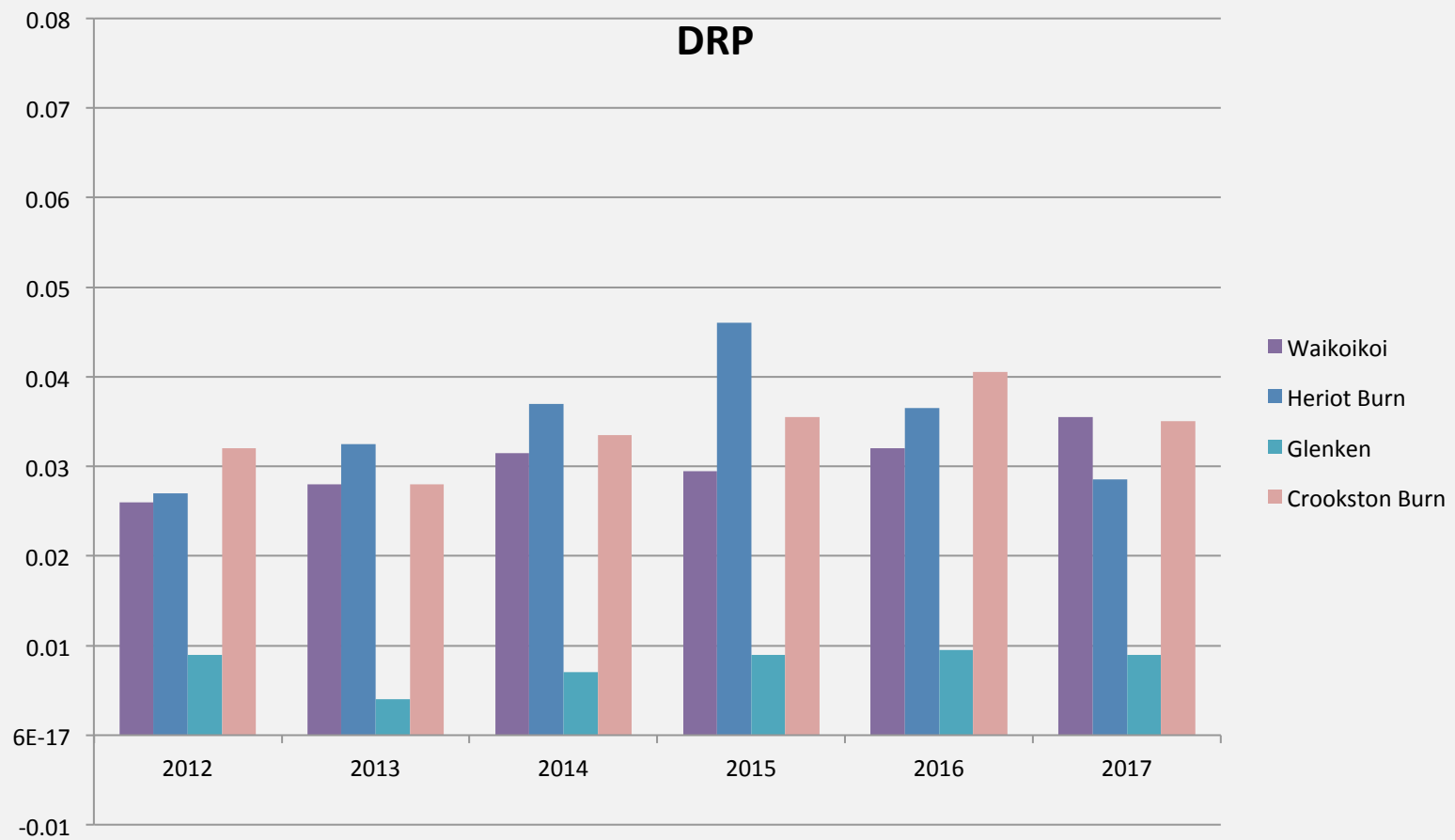
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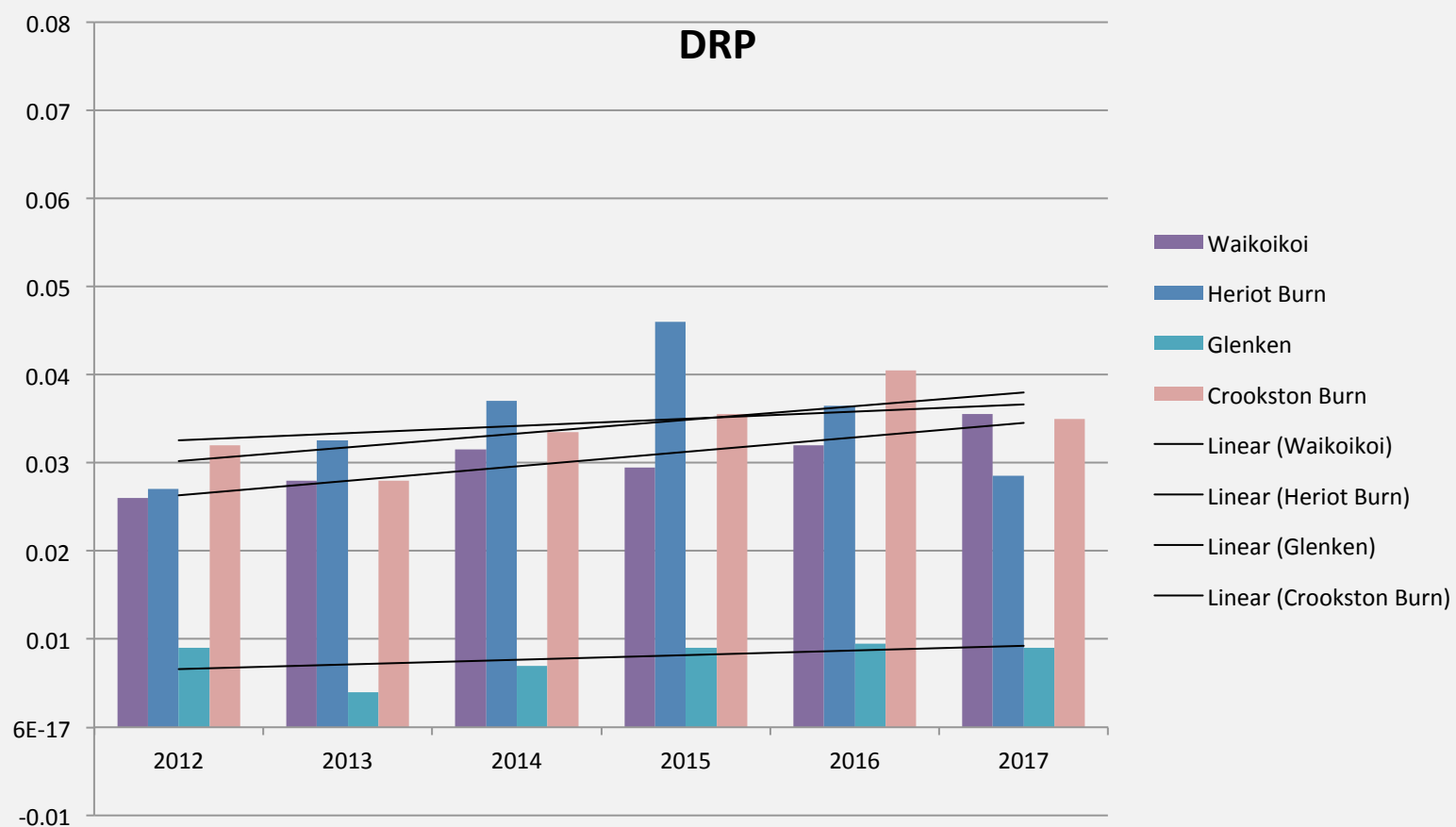












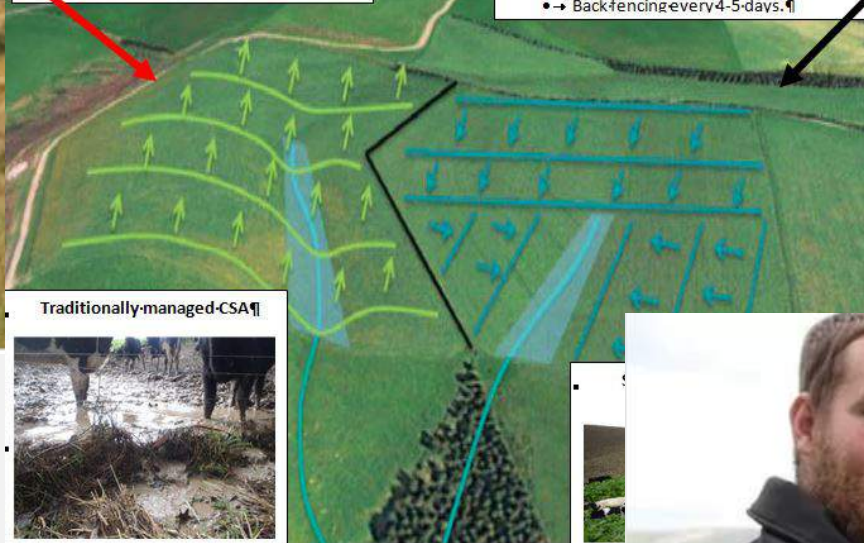


Traditionally-Grazed-Crop-Paddock¶

- Start grazing from the bottom of the catchment moving up¶
- No fencing off of CSAs or restricted grazing of them¶
- No backfencing¶

Strategically-Grazed-Crop-Paddock¶

- CSAs fenced off and grazed last when soil conditions suit, for a restricted period of time.¶
- Start grazing from top of catchment, always moving towards CSA¶
- Backfencing every 4-5 days.¶



Logan Wallace runs 2200 Romney-Texel ewes and 600 hoggets.

WATER-WISE IN WAIPAHI





Riparian Planting Initiative

- Farmers pay \$2 per plant deposit
- Local nursery is supplying growing area and expertise
- Local groups provide labour
- Farmers pay \$3 on delivery (full cost \$5 per plant)
- Win-win for farmers and local fundraising
- Bringing town and country together
- 22,200 plants ordered



Pomahaka Water Care Group

- 160 members (47%) of land owners
- Supported by NZ Landcare Trust with co-ordination and advice
- Committee of 10
- Representatives from all tributaries
 - Spylaw
 - Heriot Burn
 - Crookston Burn
 - Waikoikoi
 - Waipahi
 - Wairuna
 - Washpool



We are now inviting new membership from any farmers who want to manage their environmental footprint to help protect our waterways.

Vision
Our aim is for the Pomahaka River to be recognised as having the absolute highest water quality so that future generations can enjoy the river as we have.

Values

- Profitable, sustainable agriculture thriving together
- alongside local business, recreation and tourism.
- A pristine environment to swim, play and fish in.
- Healthy ecosystems for fish life.
- Educate via encouragement rather than enforcement.

Goals

- Promote and grow a strong stand alone water care group.
- Know what is in our waterways (group testing).
- Know what your business is contributing (discharge testing).
- Improve awareness by building knowledge so best practice becomes normal practice.
- Encourage everyone in the community to work alongside stakeholders and iwi to achieve the vision.

Please contact a committee member or email:
 pwcg2016@gmail.com
 Lloyd McCall | 027 248 9090
 Simon O'Meara | 027 242 6248
 Michael Morris | 027 474 7119
 Shane Bocock | 027 230 2864



SFF Funding Overview

- Three year project – starting July 2018
- Includes 3 days/week project coordination, management & administration
- Continue with current work programme & expand this



Sustainable Farming Fund Project

- Research the effectiveness of on-farm constructed wetlands – 4 wetland areas
- Research the effectiveness of sediment traps – 2 traps on permanently running waterways, 2 traps on waterways which run sometimes
- Research the effectiveness of grass filter strips
- Form a Best-practice response team



Questions

