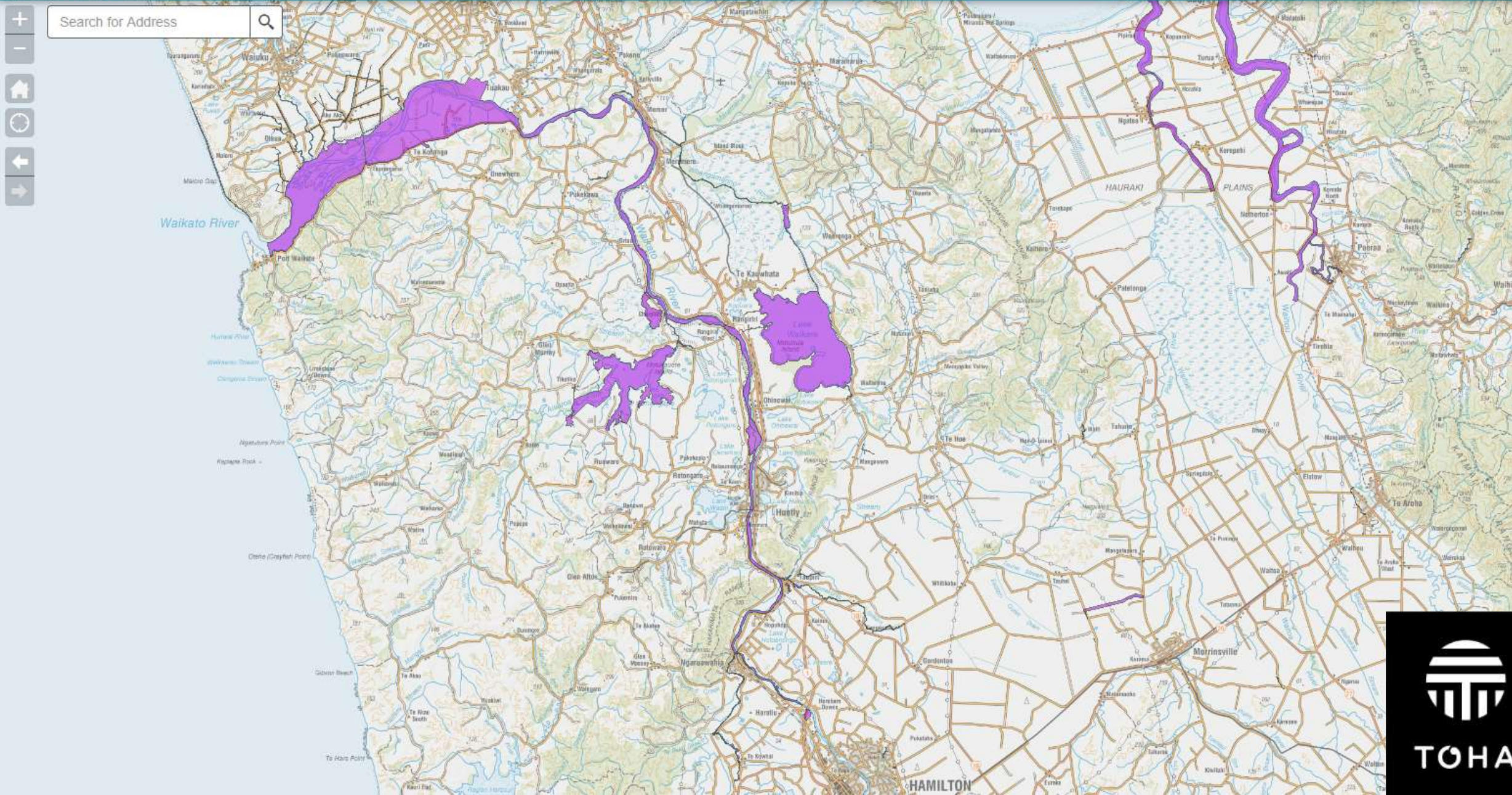






# Pest plant control over water under Resource Consent 124871



## Scheduled herbicide control operations



Below is a list of scheduled spraying operations. This list will be updated regularly so please check this page for updates. [Click here](#) for past spraying operations.

Date	Location	Control type	Herbicide	Map number/s	Target pest plants
9 - 30 July 2019	Waikato River Delta	Helicopter	Metsulfuron	1, 3	Alligator weed
9 - 30 July 2019	Waikato River from Rangiriri downriver to the Elbow	Gun & Hose, Mistblower	Metsulfuron	3, 4, 5A, 5B, 9	Alligator weed



## HAZARD CLASSIFICATIONS

Classifications 6.3B, 6.4A, 9.1A, 9.2A



**ECOTOXIC**



**APPROVED HANDLER** - This product must be under the care of an approved handler when it is applied in a wide dispersive manner, used by a commercial contractor or applied into or onto water.

**RECORD KEEPING** - Records of use must be kept under certain circumstances – see The New Zealand Standards for Management of Agrichemicals (NZS8409) for details

### TOXICITY

Warning –

**May cause eye irritation and mild skin irritation.**

**Avoid contact with eyes and skin.**

### ECOTOXICITY

**Very toxic to aquatic organisms.** Avoid contamination of any water supply with product or empty container. This substance may only be applied onto or into water by, or under the direct supervision of, an approved handler who has undergone specialised training in the application of pesticides to water and if permission has been obtained under section 95A of the Hazardous Substances and New organisms Act 1996.

**Very toxic to the soil environment.**

### HANDLING PRECAUTIONS

Keep out of reach of children.



TOHA

1					
2	14 - 18 April 2019	Waikato River - Port Waikato to Mercer	Helicopter	Metsulfuron	Alligator Weed
3	10 - 30 June 2019	Waikato River - Port Waikato to Mercer	Helicopter	Metsulfuron	Alligator weed
4	10 - 30 June 2019	Waikato River - Port Waikato to Ngaruawahia	Gun and hose from boat	Metsulfuron	Alligator weed
5	26 Feb - 17 Mar 2019	Waikato River - Port Waikato to Ngaruawahia	Gun & Hose, Mistblower	Metsulfuron	Alligator weed
6	12 Feb - 04 Mar 2019	Waikato River Delta	Helicopter	Haloxypop	Pampas, Glyceria
7	03 - 23 January 2019	Waikato River, Hampton Downs to Port Waikato	Gun and Hose, Mistblower	Metsulfuron	Alligator Weed
8	12 Feb - 04 Mar 2019	Waikato River, Mercer to Waikato Delta	Helicopter	Metsulfuron	Alligator Weed
9	14 Jan - 03 Feb 2019	Waikato River, Port to Hampton Downs	Gun & Hose, Mistblower	Metsulfuron	Alligator Weed
10	18 Mar - 08 Apr 2019	Waikato River, Port Waikato to Ngaruawahia	Gun & Hose, Mistblower	Metsulfuron	Alligator weed
11	04 - 25 February 2019	Waikato River, Port Waikato to Ngaruawahia	Gun & Hose, Mistblower	Metsulfuron	Alligator Weed
12	26 November - 14 December	Waikato River Tuakau Bridge to Ngaruawahia	Gun & Hose/Mistblower	Metsulfuron	Alligator weed
13	26 November - 14 December	Waikato River Tuakau Bridge to Delta	Gun & Hose/Mistblower	Metsulfuron	Alligator weed
14	26 - 30 November 2018	Waikato River - Narrows	Mistblower	Metsulfuron	Alligator weed
15	11 - 18 November 2018	Waikato River - Whangape Stream/Rangiriri area	Helicopter	Metsulfuron	Alligator weed
16	16 October - 5 November 2018	Waikato River - Port Waikato to Tuakau Bridge	Gun & hose	Metsulfuron	Alligator weed
17	15 October - 5 November 2018	Waikato River - Tuakau Bridge to Hampton Downs, Whangape	Helicopter - Boom spray	Metsulfuron	Alligator weed
18	8 October - 29 October 2018	Waikato River - Narrows to Hamilton	Gun & hose or mist-blower	Metsulfuron	Alligator weed
19	17 September - 29 October	Waikato River, Port Waikato to Ngaruawahia	Gun & hose and Mist Blower	Metsulfuron	Alligator weed
20	28 August - 17 September	Waikato River, Port Waikato to Ngaruawahia	Gun & hose and Mist Blower	Metsulfuron	Alligator weed
21	2 August - 23 August	Waikato River from Tuakau Bridge to Port Waikato	Gun & hose	Metsulfuron	Alligator weed
22	9 July - 30 July 2018	Waikato River from Tuakau Bridge to Port Waikato	Gun & hose	Metsulfuron	Alligator weed
23	5 June - 26 June 2018	Waikato River delta area	Gun & hose	Metsulfuron	Alligator weed
24	9 - 20 April 2018	Waikato River delta area	Helicopter	Metsulfuron	Alligator weed
25	22 March - 13 April 2018	Waikato River downstream from Narrows	Gun & hose	Metsulfuron	Alligator weed
26	19 March - 9 April 2018	Waikato River from Meremere to Tuakau, Lake Waikare, Whangape	Helicopter	Metsulfuron	Alligator weed
27	9 - 30 March 2018	Waikato River from Ngaruawahia to Waikato delta, Lake Waikare	Gun & hose	Metsulfuron	Alligator weed
28	5 - 26 February 2018	Waikato River from Ngaruawahia to Waikato delta, Lake Waikare	Gun & hose	Metsulfuron	Alligator weed
29	7-27 January 2018	Waikato River from Port Waikato to Tuakau bridge	Helicopter and gun and hose spraying	metsulfuron	Alligator weed
30	5-25 January 2018	Waikato River from Ngaruawahia to Tuakau Bridge, plus Whangape	Gun and hose spraying from boat	metsulfuron	Alligator weed
31	12 - 22 December 2017	Waikato River - Port Waikato to Tuakau bridge	Gun & hose	metsulfuron	Alligator weed
32	5 - 22 December 2017	Waikato River Narrows to Hamilton	Mistblower	metsulfuron	Alligator weed
33	27-Nov-17	Waikato River, Ngaawapura Rapids to Waitapu Stream	Knapsack	metsulfuron	Yellow flag iris
34	6 - 20 November 2017	Waikato River - Narrows to Hamilton	Knapsack	metsulfuron	Alligator weed
35	26 October to 15 November	Waikato River from Ngaruawahia to Waikato delta	Gun and hose from boat	metsulfuron	Alligator weed
36	4 - 18 October 2017	Waikato River between Narrows and Hamilton	Knapsack	metsulfuron	Alligator weed
37	18 September to 9 October 2017	Waikato River from Ngaruawahia to Waikato delta	Gun and hose from boat	metsulfuron	Alligator weed
38	9 - 30 August 2017	Waikato River from Horotiu Bridge to Waikato delta including Lake Waikare	Helicopter and gun & hose from boat	metsulfuron	Alligator weed
39	9 - 30 August 2017	Waikato River from Narrows to Hamilton City boundary	Gun & hose from boat	metsulfuron	Alligator weed
40	19 July to 8 August 2017	Waikato River from Horotiu Bridge to Waikato delta including Lake Waikare	Helicopter and gun & hose from boat	metsulfuron	Alligator weed
41	6 - 30 June 2017	Waikato River from Tuakau to Horotiu Bridge, including Lake Waikare	Helicopter and gun and hose	metsulfuron	Alligator weed
42	18 April - 5 May 2017	Waikato River from Port Waikato to Ngaruawahia, including Lake Waikare	Helicopter and gun and hose	metsulfuron	Alligator weed
43	17 March - 6 April 2017	Waikato River from Port Waikato to Tuakau Bridge	Helicopter and airboat	metsulfuron	Alligator weed
44	17 February - 9 March 2017	Waikato River from Port Waikato to Ngaruawahia	Helicopter or gun and hose	metsulfuron	Alligator weed
45	17 January - 6 February 2017	Waikato River from Port Waikato to Huntly, and Lake Waikare	Helicopter and gun and hose spraying	metsulfuron	Alligator weed
46	22 December 2016 to 12 January 2017	Waikato River from Port Waikato to Huntly, and Lake Waikare	Helicopter and gun and hose	metsulfuron	Alligator weed
47	30 November - 20 December 2016	Waikato River from Huntly to Waikato Delta, Lake Waikare	Helicopter	metsulfuron	Alligator weed
48	22 November - 13 December 2016	Waikato River from Port Waikato to Tuakau Bridge, including Lake Waikare	Gun and hose from boat	metsulfuron	Alligator weed
49		Waikato River from Whangape Stream to Ngaruawahia			
50	22 October - 12 November 2016	Waikato River from Port Waikato to Tuakau Bridge	Gun and hose from boat	metsulfuron	Alligator weed
51	1 - 15 October 2016	Waikato River from Port Waikato to Tuakau Bridge	Gun and hose from boat	metsulfuron	Alligator weed
52	14 - 30 September 2016	Waikato River from Ngaruawahia to Tauranganui, including Lake Waikare	Gun and hose from boat	metsulfuron	Alligator weed
53					



Search Waikato Regional Council

Services » Regional Services » Plant and animal pests » Plant pest spraying operations

Data Catalogue

Maps

Publications

Regional Services

Consents and compliance

Environmental education

Regional hazards and  
emergency management

Investigation and  
enforcement

Iwi

Maritime services

## Pest plant control over water

### Operations under Resource Consent 124871

Every year Waikato Regional Council carries out targeted spray operations to control invasive pest plants growing in our rivers, lakes and wetlands.

This work is important to protect the environment – and in particular agricultural production – from the impacts of these pest plants, as well as to improve biodiversity.

Council holds a resource consent for the application of agrichemicals to air where they may enter water and the coastal marine area within the Waikato region.

This consent allows the use of [specific herbicides](#) for controlling pest plants that cannot generally be controlled with glyphosate.

#### Resource consent details

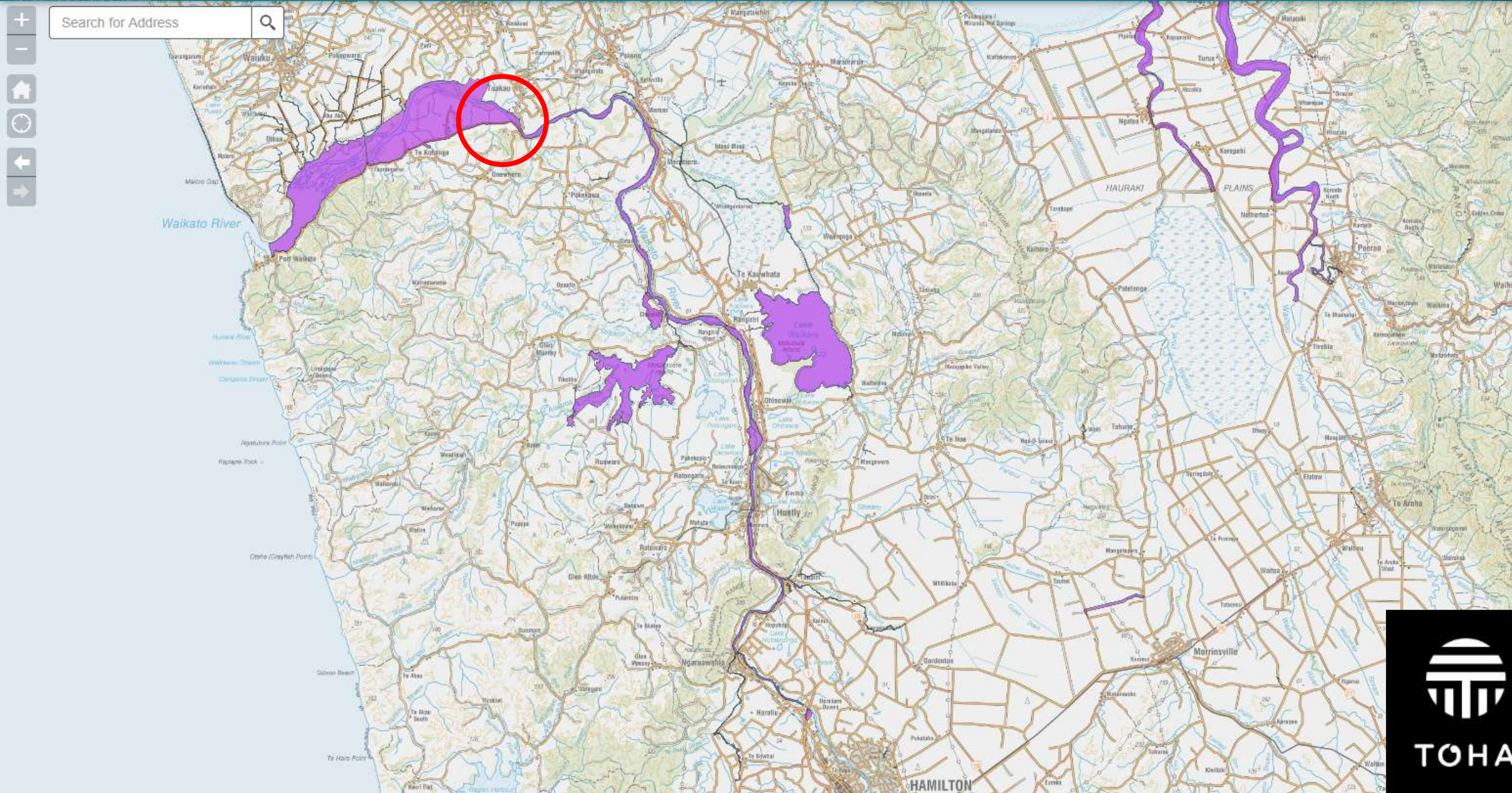
Consent no: 124871



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# Pest plant control over water under Resource Consent 124871





TOHA



**Linnburn  
Station**  
CENTRAL OTAGO



**Linnburn  
Station**  
CENTRAL OTAGO









# Principles of Soil Health developed by Nature



1. Limited disturbance of soil
2. Armour – keep soil covered at all times
3. Diversity of plant and animal species
4. Living roots – maintain as long as possible
5. Integrated animals – nature does not function without animals

*Dirt to Soil – Gabe Brown*





**Linnburn  
Station**  
CENTRAL OTAGO



**Linnburn  
Station**  
CENTRAL OTAGO

Type	Seed Type	Hildas Rye Mix
Clover	Balansa Clover	0.19
Clover	Persian Clover	0.17
Clover	Berseem Clover	0.38
Clover	Strawberry Clover	2.00
Lucerne	Wholesale Seed Lucerne	0.33
Chichory	Antler Chichory	0.25
Plantain	Seed Force Boston Plantain	0.25
Clover	Crimson Clover	0.51
Oats	Black Oats	4.55
Peas	Blue Prussian Peas	2.22
Lentils	Red Lentils	0.38
Mustard	Yellow Mustard	0.66
Millet	Japanese Millet	0.58
Ryecorn	Ryecorn	3.07
Buckwheat	Buckwheat	1.70
Grass	Sheeps Burnett	0.45
Lupins	Blue Lupins	0.38
Grass	Pharcelia	0.45
Beet	Fodder Beet	0.06
Rape	Hunter Rape	0.10
Sunflower	Sunflower	2.50
Turnip	Green Globe Turnip	0.06
Barley	Barley	3.84
Mix	Swede Kale Mix	0.20
Oats	White Oats	2.73
Radish	Lunch Radish	0.26
Clover	White Clover	0.05
	Dandelions	0.02
Clover	Red Clover	0.05
Grass	Sorghum Sudan	2.25
Grass	Moata Ryegrass	0.51
	Linseed	1.62
	Total Kg/ Ha	32.75
	Number of Species	32







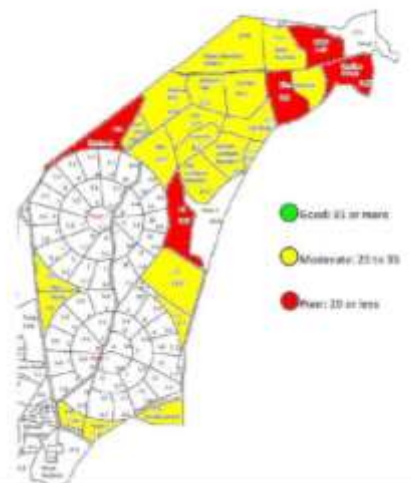




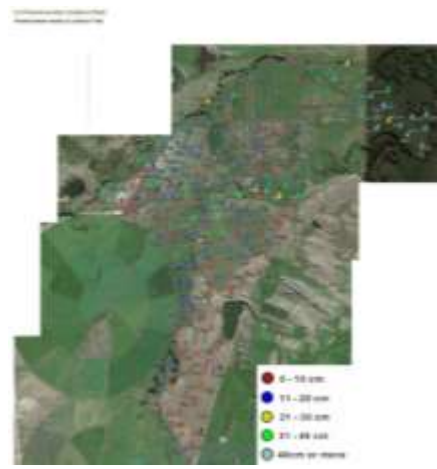
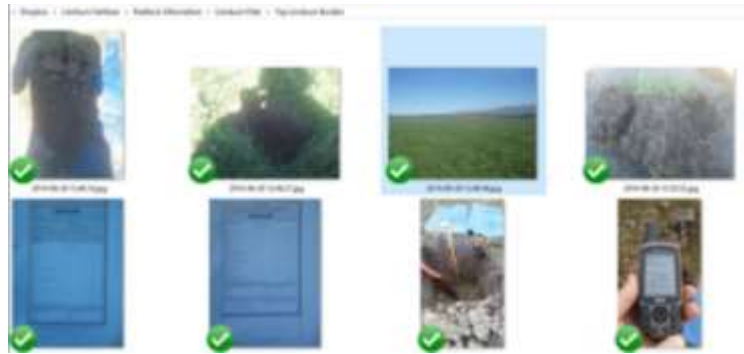
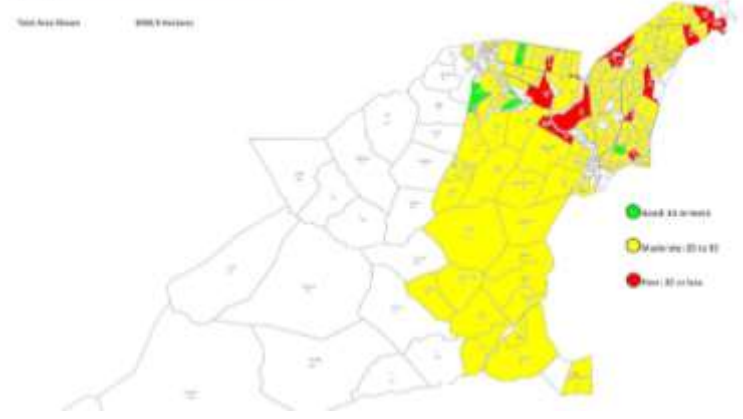
### Visual Soil Assessment Linnburn Flats 2014

GIBSON ROAD		DUNDAS ROAD		DUNDAS ROAD		DUNDAS ROAD		DUNDAS ROAD		DUNDAS ROAD		DUNDAS ROAD	
Lot	Area	Lot	Area	Lot	Area	Lot	Area	Lot	Area	Lot	Area	Lot	Area
1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1
2	0.1	2	0.1	2	0.1	2	0.1	2	0.1	2	0.1	2	0.1

V.I. Visual Soil Assessment Linnburn Flats  
V.I. was performed in the following locations in the Linnburn Flats area with the following results in terms of soil quality index:

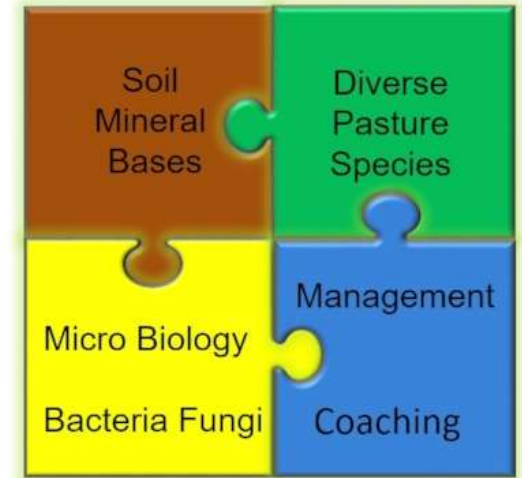


V.I. Visual Soil Assessment Completed on Linnburn Station  
A preliminary V.I.





## Soil Connection biological system



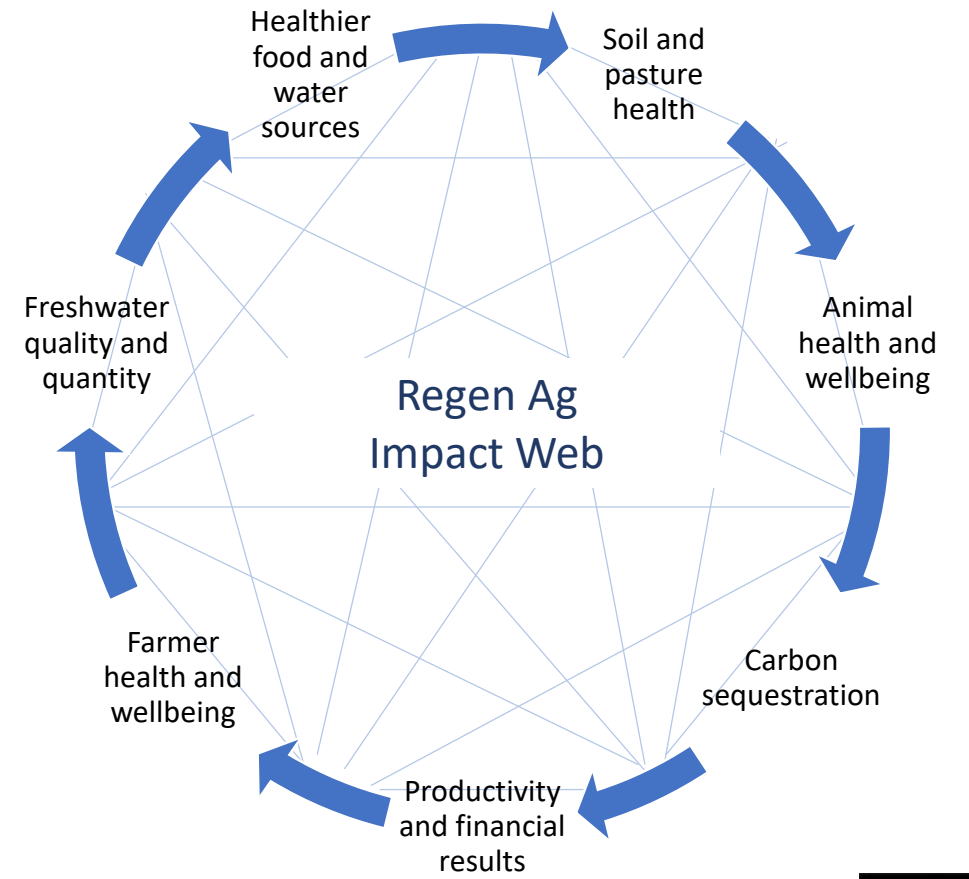
<https://www.soilconnection.net/>



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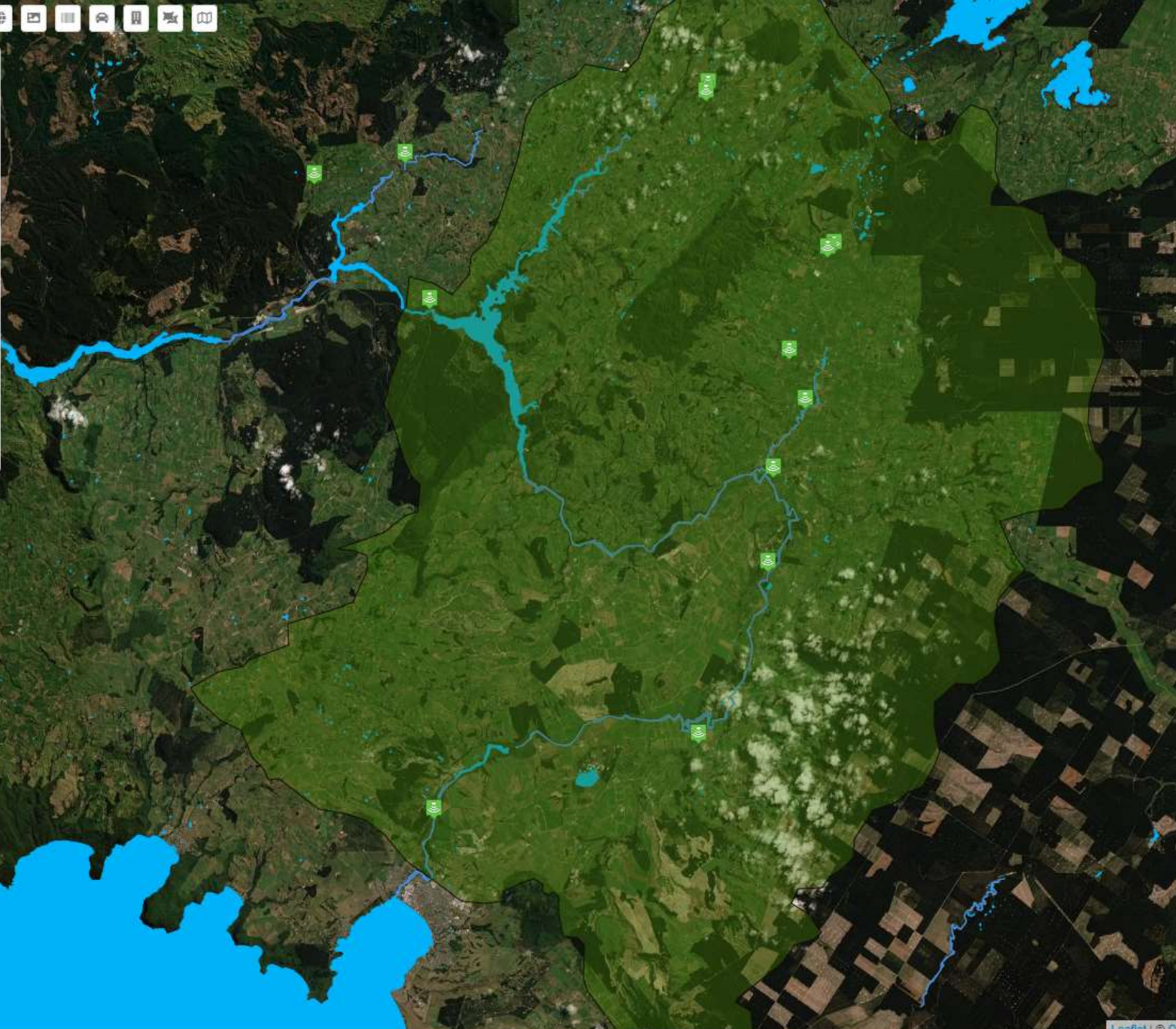


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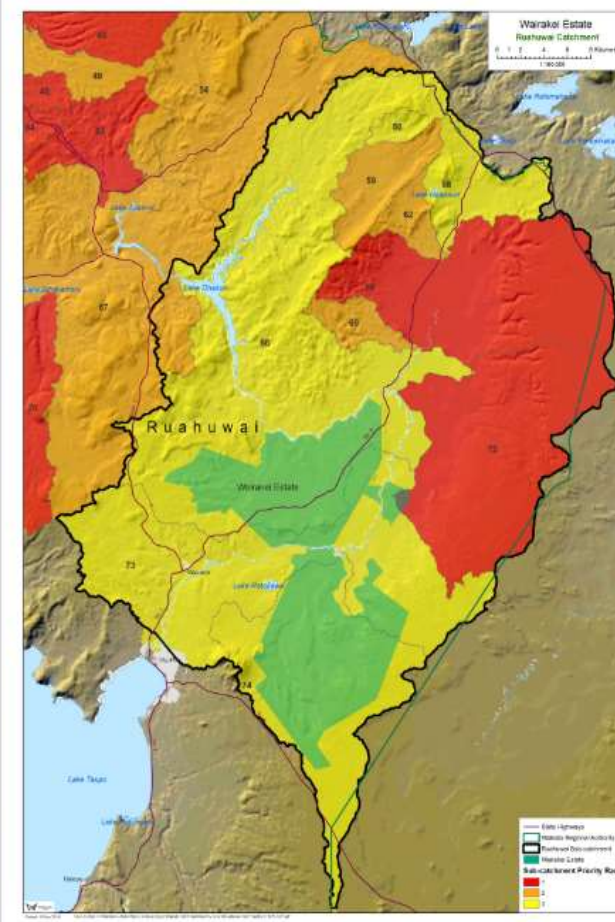




- General
- Waikato Catchment Area B
  - TARIT Land
  - Ruahwai catchment
  - Te Arawa River Iwi Area
  - River Catchment zones
  - NZLRI Vegetation



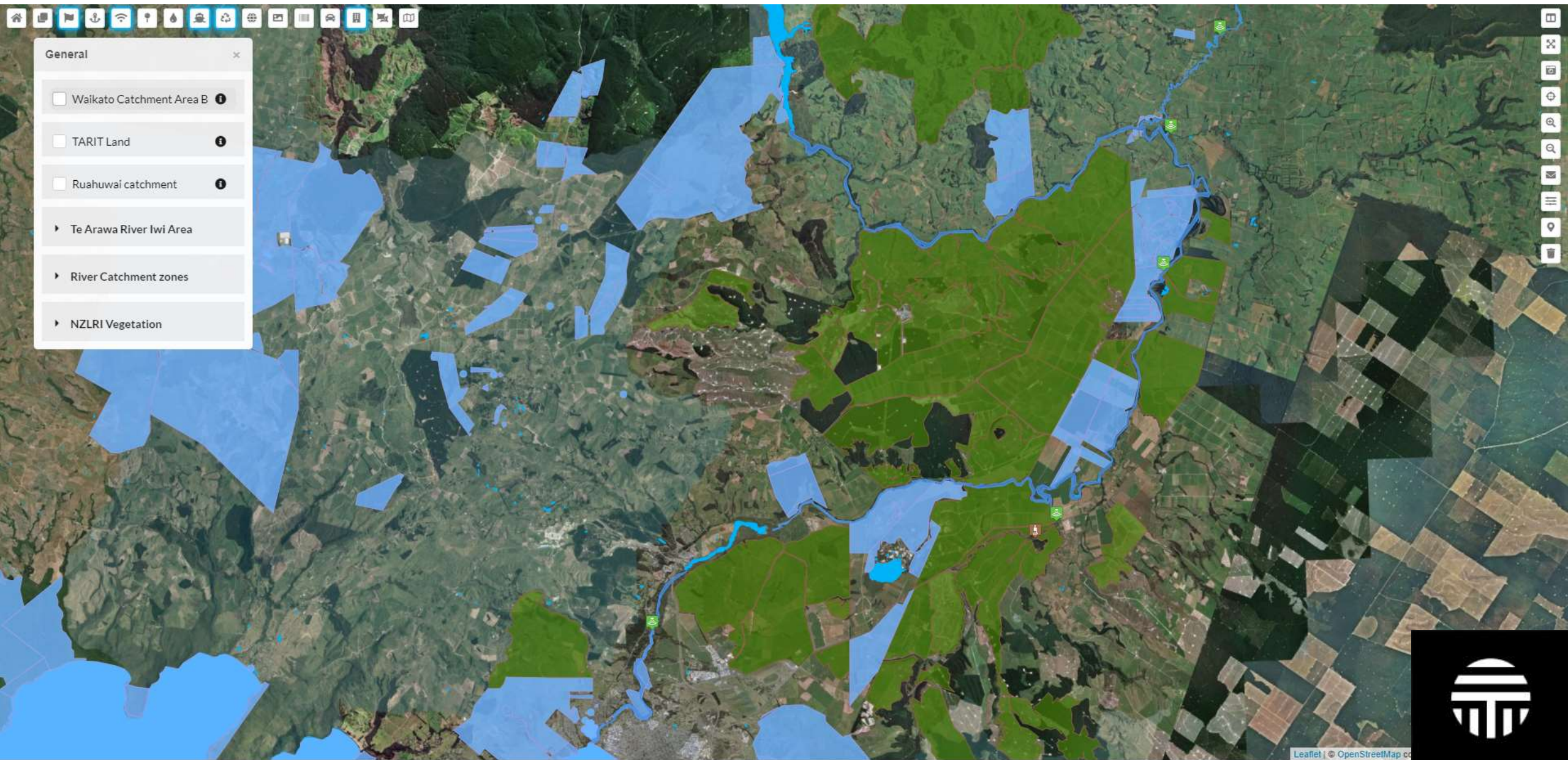
### TARIT Ruahwai catchment





General

- Waikato Catchment Area B
- TARIT Land
- Ruahuwai catchment
- ▶ Te Arawa River Iwi Area
- ▶ River Catchment zones
- ▶ NZLRI Vegetation



Leaflet | © OpenStreetMap co





- Sensors**
- LCW - Lower Pueto WQ
  - WRC monitored sites
  - River Sense Sensors
  - Wairakei pastoral

Wairakei pastoral

**Measurement:**

Add measurement

Nitrate Concentration  
eg 0-100,200-300 range

Nitrite Concentration  
eg 0-100,200-300 range

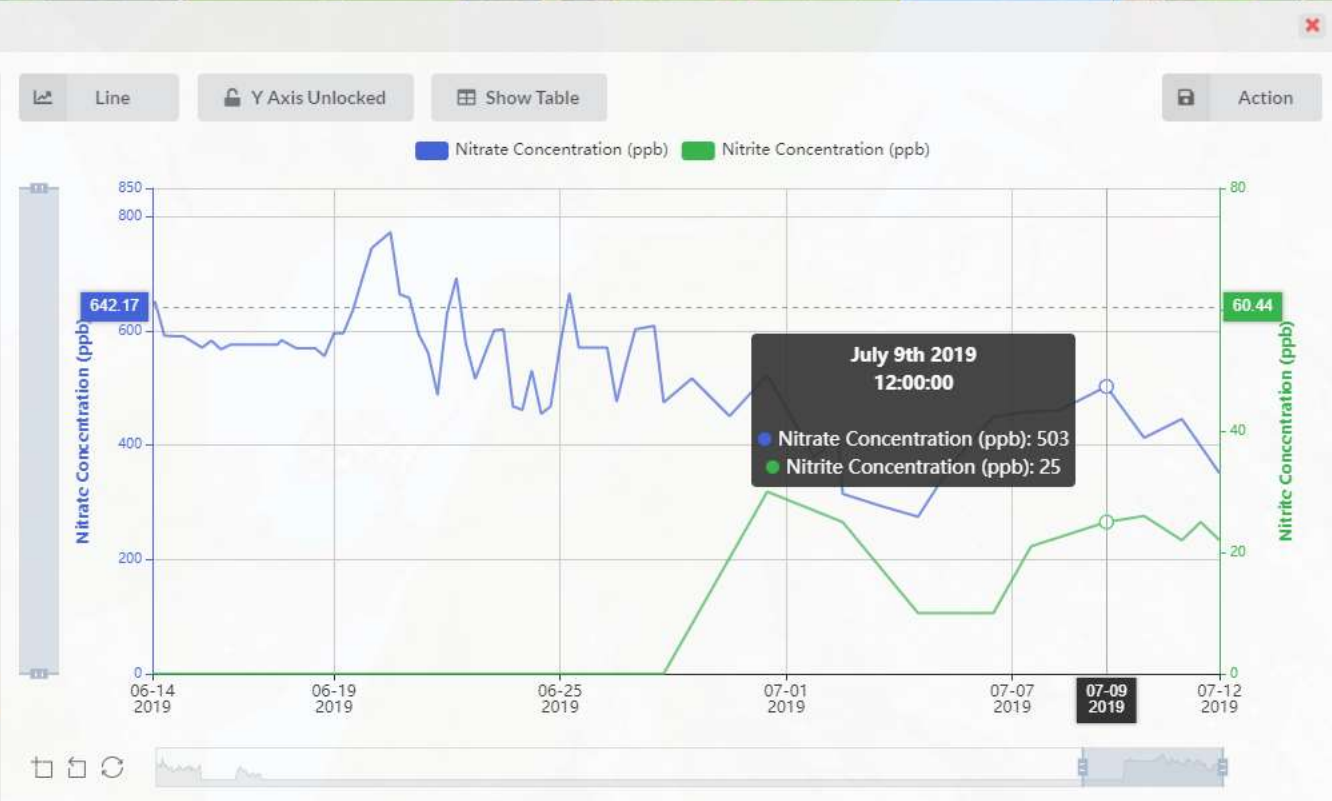
**Date Range:**

Custom Range

From: 01/11/2018 00:00:00

To: 31/08/2019 23:59:59

**Apply**



Nitrate Concentration - Showing 822 readings  
Nitrite Concentration - Showing 815 readings







- Sensors**
- LCW - Lower Puerto WQ
  - WRC monitored sites
  - River Sense Sensors
  - Wairakei pastoral

Wairakei pastoral

**Measurement:**

Add measurement

Dissolved Oxygen  
eg 0-100,200-300 range

Turbidity  
eg 0-100,200-300 range

Temp  
eg 0-100,200-300 range

Date range from: 01/05/2019 to: 26/06/2019

End Date:  
26/06/2019

**Apply**



## ESSENTIAL FRESHWATER: Healthy water fairly allocated (2018)

By 2020, new rules will be in place that will stop the degradation of New Zealand's freshwater.

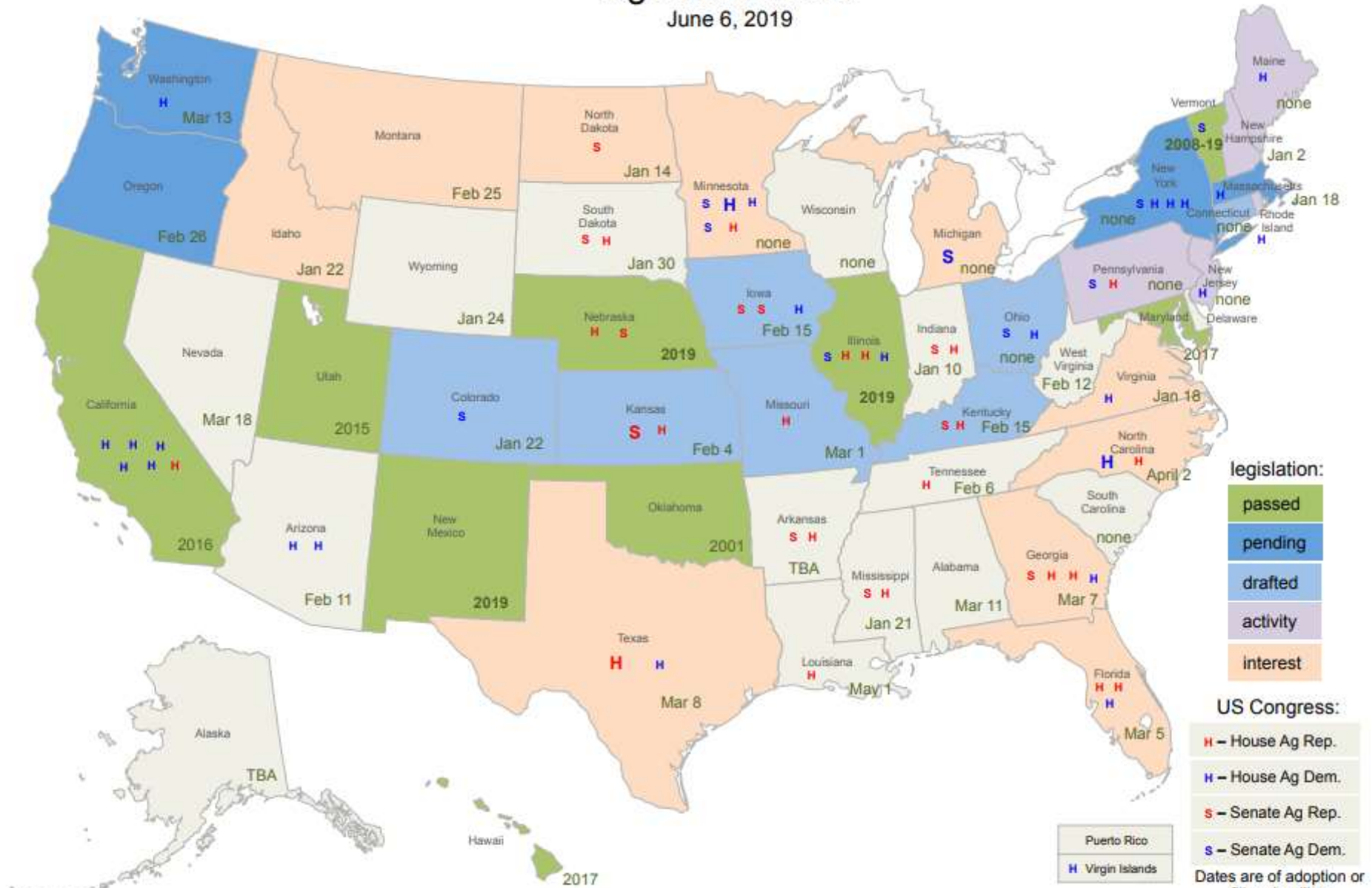
In five years there will be a noticeable improvement in freshwater quality.

1. Stopping further degradation and
2. Reversing past damage
3. Addressing water allocation issues



# Healthy Soils legislative status

June 6, 2019

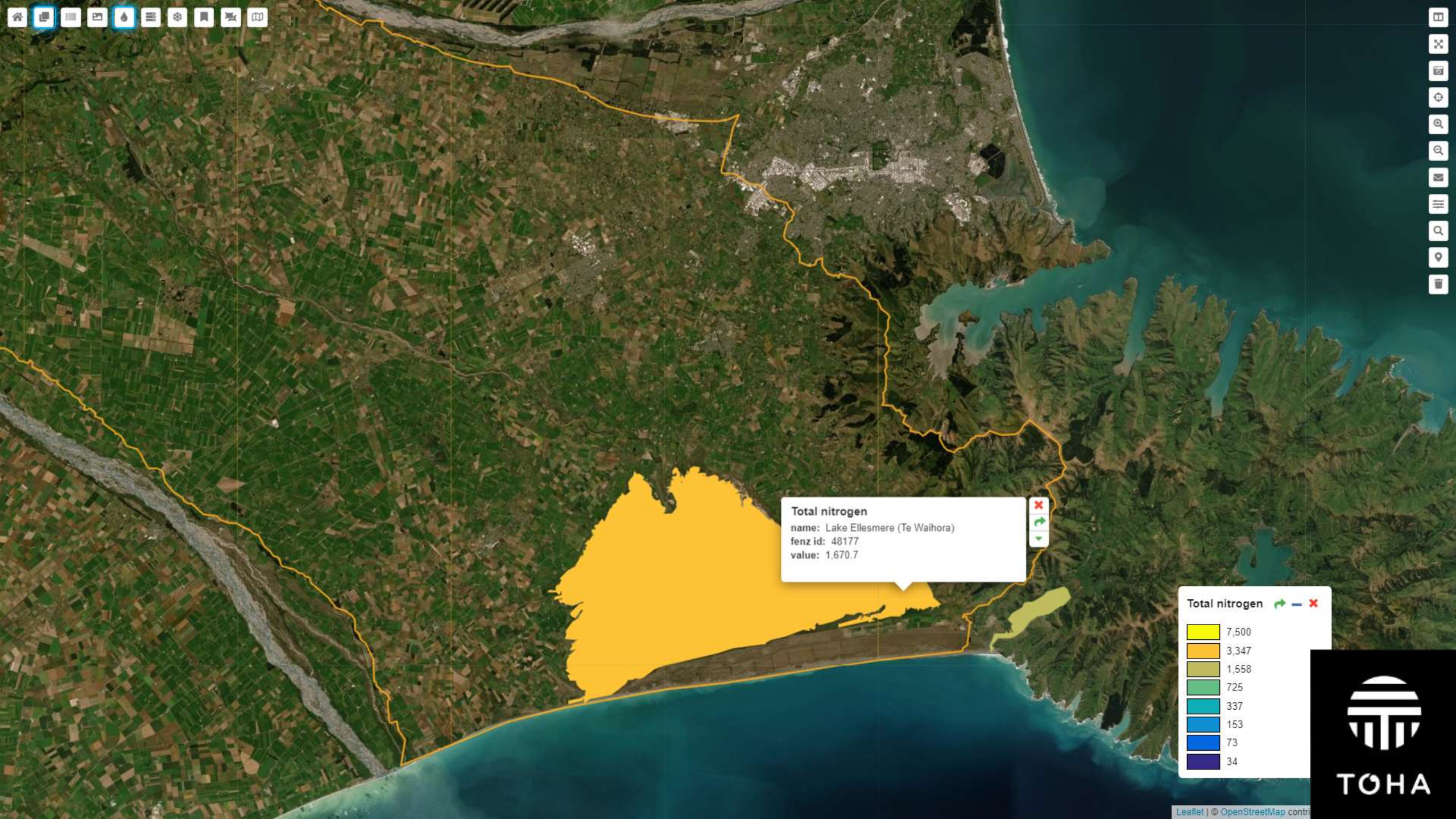


legislation:  
passed  
pending  
drafted  
activity  
interest

US Congress:  
H - House Ag Rep.  
H - House Ag Dem.  
S - Senate Ag Rep.  
S - Senate Ag Dem.  
 Dates are of adoption or filing deadline  
 (TBA = To Be Announced)  
 © FreePowerPointMaps.com

[healthy-soils-legislation@googlegroups.com](mailto:healthy-soils-legislation@googlegroups.com)





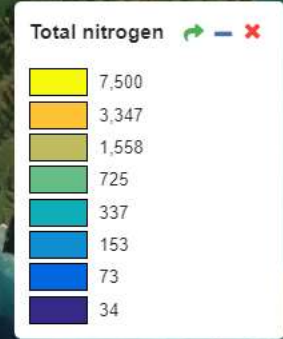
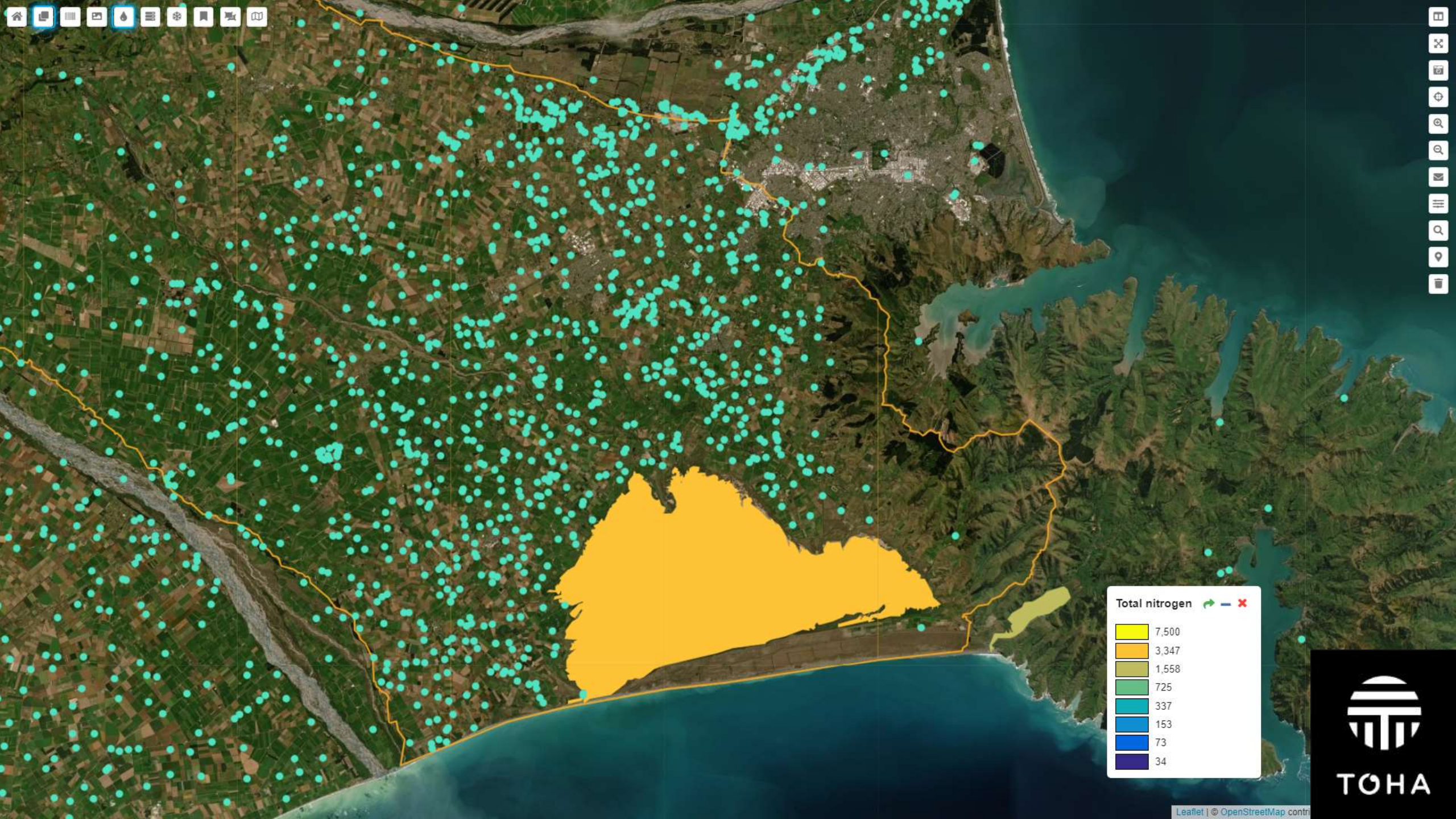
**Total nitrogen**  
name: Lake Ellesmere (Te Waihora)  
fenz id: 48177  
value: 1,670.7



**Total nitrogen** ↻ - ✖

7,500
3,347
1,558
725
337
153
73
34





# Cantabrians may have higher cancer risk from poor drinking water

Paul Gorman · 18:19, Nov 26 2018



Water scientist Dr Mike Joy has been testing the nitrate levels of water around Canterbury.

Contaminated drinking water may be increasing the risk of bowel cancer for some Cantabrians.

A citizen science experiment of 114 Canterbury drinking water sources, conducted by Fish and Game New Zealand, revealed some samples from rural areas exceeded a new, lower, cancer-alarm level European authorities are considering following a Danish-led study of 2.7 million people.

# Canterbury water could be 'undrinkable' in 100 years because of nitrates

Frank Finn · 06:30, Jan 24, 2019



Christchurch's pristine water is world renowned and safe to drink straight from the tap. But will this statement ring true in 50 or 100 years?

Users of Canterbury's world-renowned drinking water have been issued a dire warning. "Pollution could render it undrinkable in 100 years."

The warning comes from the Canterbury Medical Officer of Health, Dr Alistair Humphrey, as concern builds over nitrates entering the water supply from dairy farms.

In the latest update, funded by the Environment Canterbury and the

# ECan councillor says proposed plan changes don't go far enough to protect drinking water

Paul Gorman · 15:38, Jul 22 2019



Environment Canterbury chief scientist Dr Tim Devie says Christchurch's drinking water is safe and will "continue to be so", but will not be as pristine. (Video first published in December 2018)

An Environment Canterbury (ECan) councillor has "grave reservations" about a proposed plan change doing enough to protect Christchurch's drinking water from nitrates contamination.

...ied about dirty rivers and streams now have a chance



## YOUR FARM'S NITROGEN LEACHING RISK

**7** KG/HA/YR

**Nitrogen Leaching Risk**  
This indicates the risk of the loss of nitrogen from the farming system into either the groundwater system or into waterways.  
A small number indicates a lower risk of nitrogen loss.



# YOUR FARM'S **NITROGEN LEACHING RISK**

**7** **KG/HA/YR**

## Nitrogen Leaching Risk

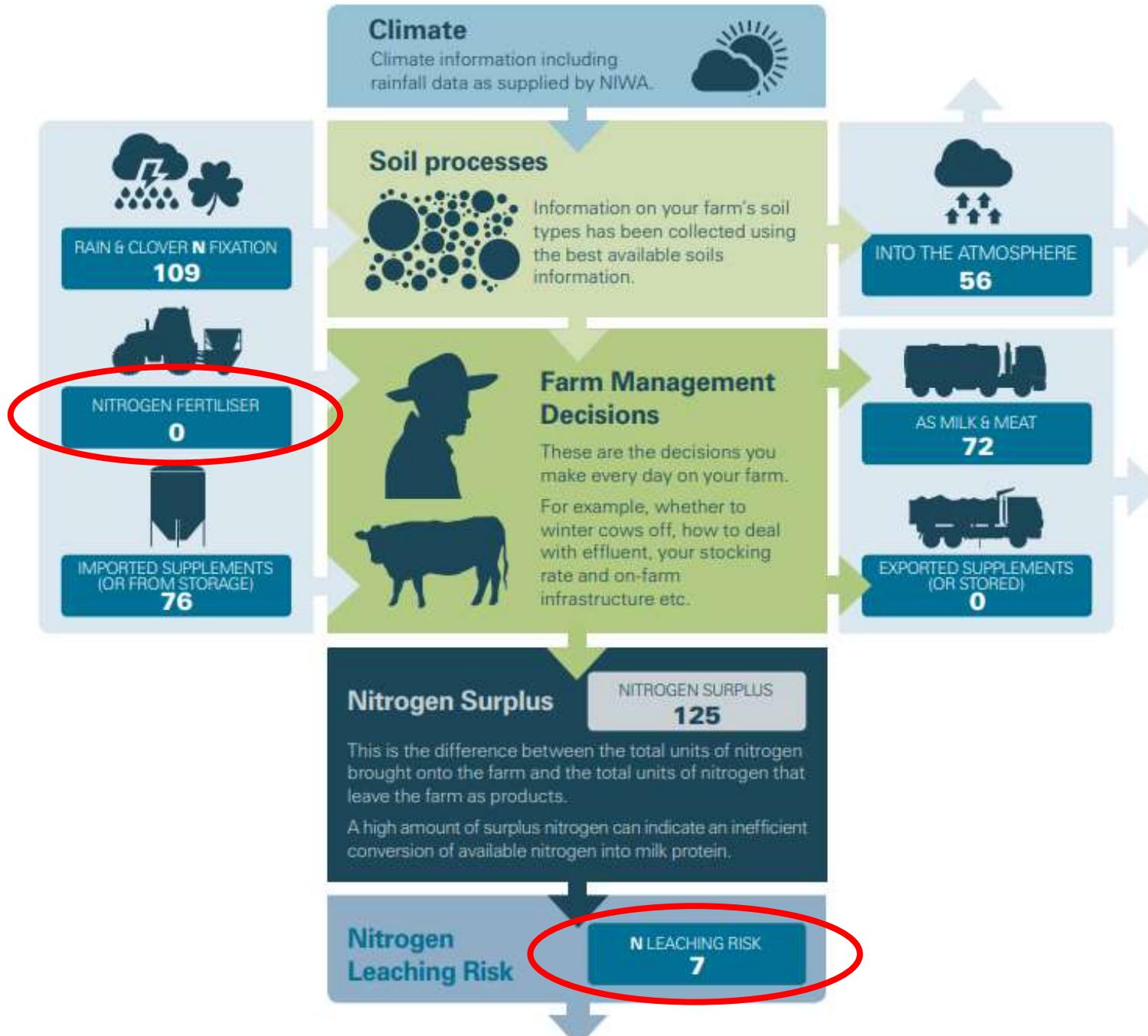
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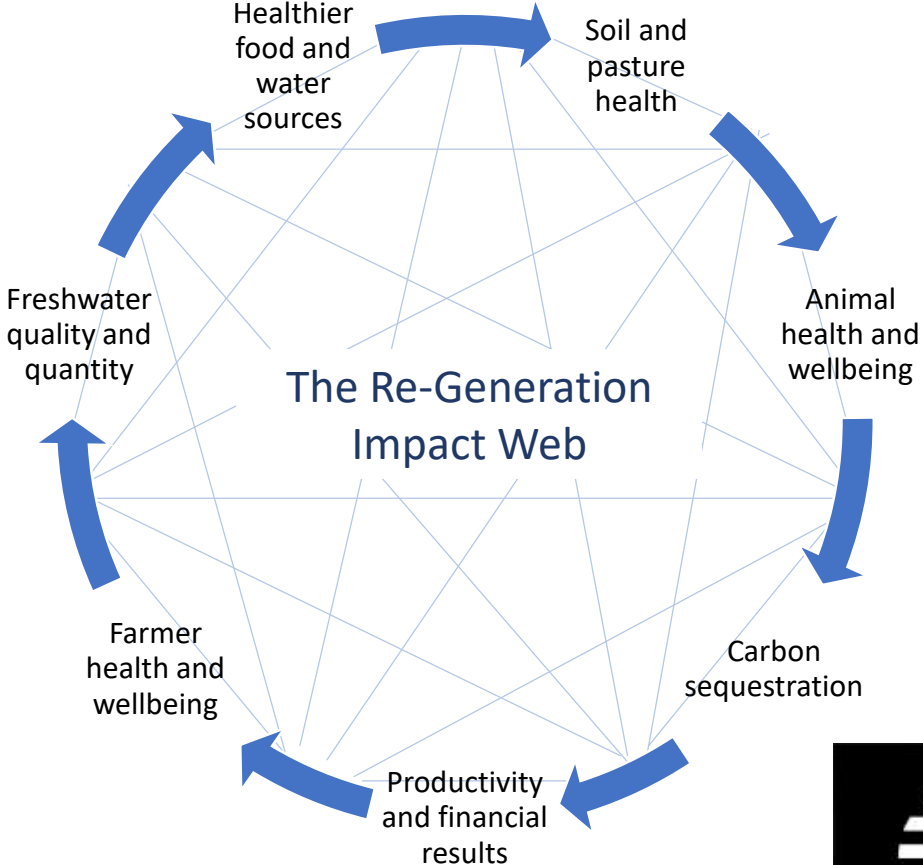
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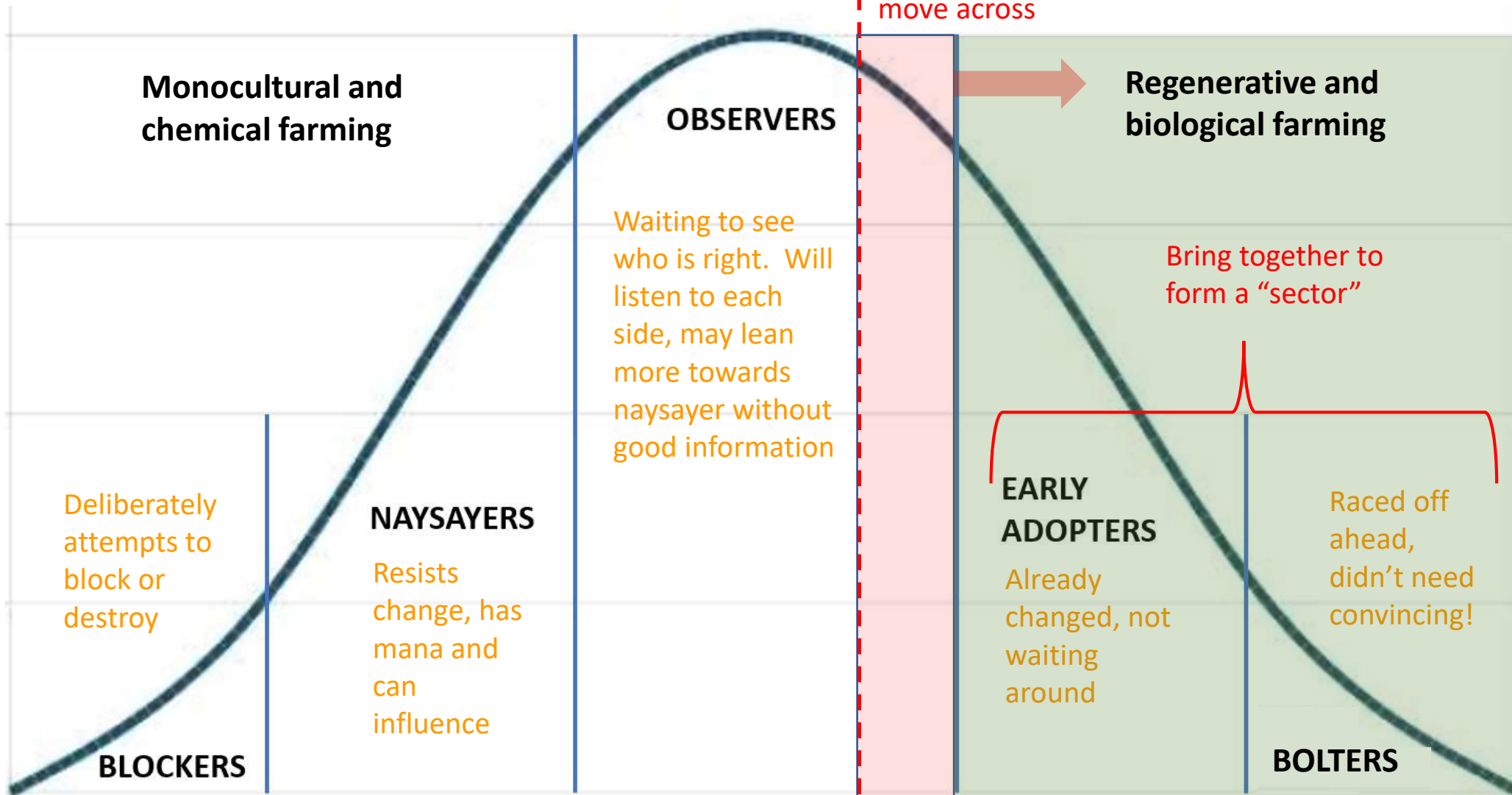


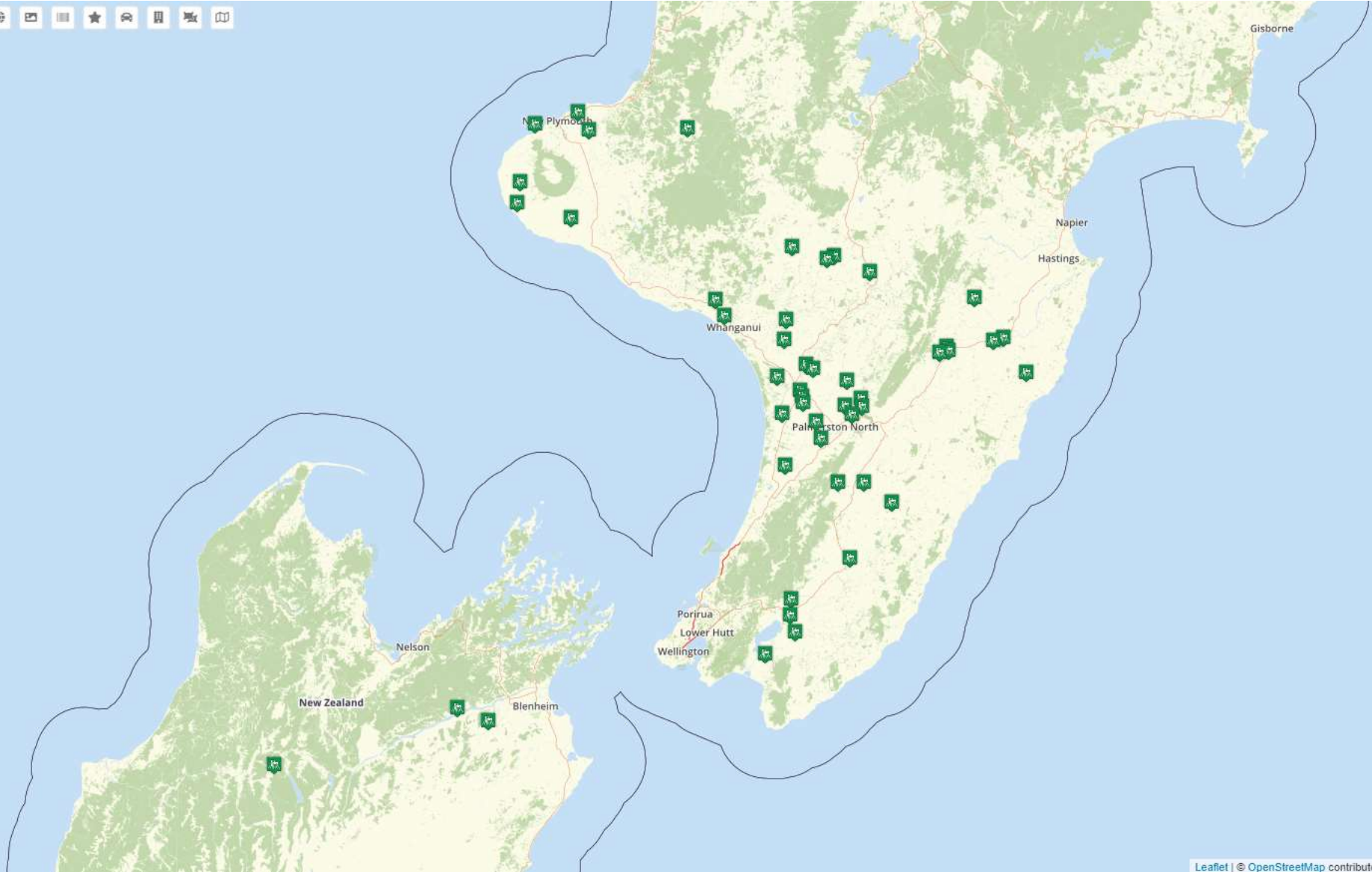


# The Re-Generation Healthy Soils – Healthy Planet



# Transition Strategy





Leaflet | © OpenStreetMap contributors, Tiles © Esri — Sc



## Why are these Farmers changing land-use and land management practices?

- Financial and economic
- Environmental
- Climate change and resilience
- More closely aligned to their cultural values
- Healthier food production
- Healthier lifestyle
- Healthier animals





[www.toha.nz](http://www.toha.nz)