

# Tarawera farm environmental plans

Farmers building on the past, preparing for the future



For Rotorua Te Arawa Lakes Strategy Group, 5 April 2019

Presentation by:

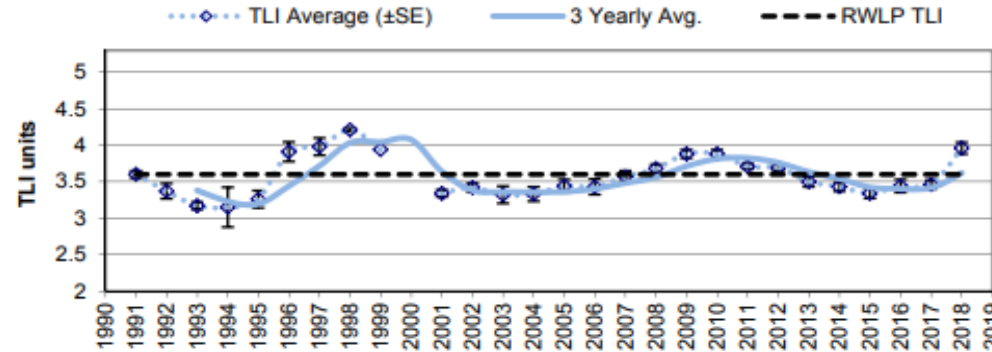
- Chris Sutton Project Rerewhakaaitu Chairman
- Simon Park Landconnect Ltd

Project  
Rerewhakaaitu

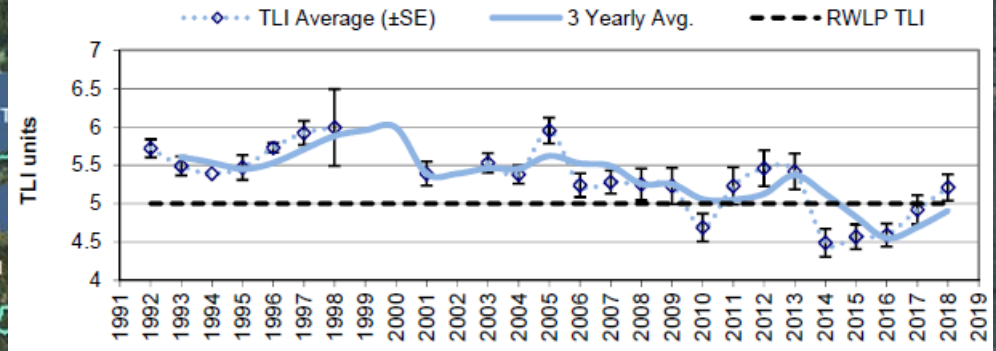


# Lake Water Quality Trends: Trophic Level Index

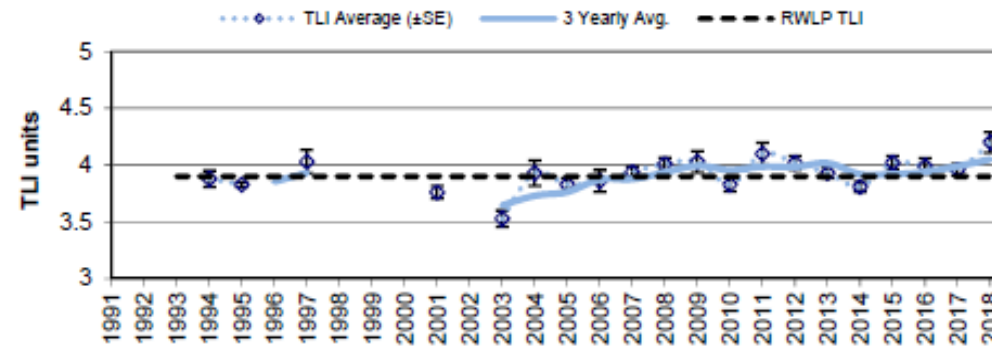
Lake Rerewhakaaitu



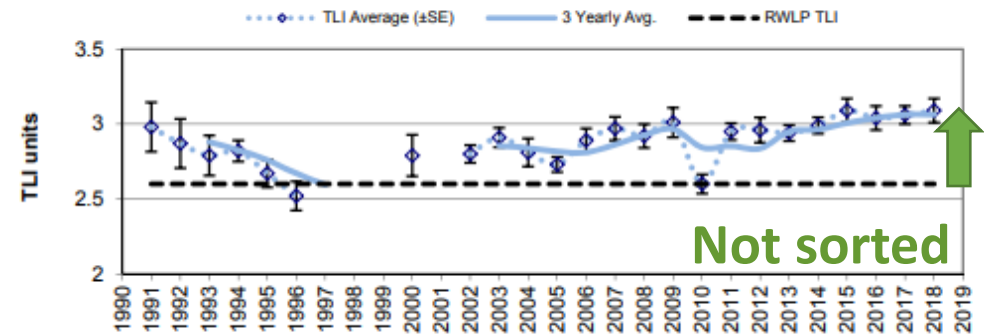
Lake Okaro



Lake Rotomahana



Lake Tarawera



# Tarawera FEPs – building on the past

## FARMING WITHIN NUTRIENT LIMITS

## Project Rerewhakaaitu history

- 2002-2006: Sustainable Farming Fund #1, build trust in science, focus on N mitigation, efficiency and field trials e.g. grass filter strips
- 2006-2008: SFF #2, focus on P loss, soil Olsen P, smelter slag P sorption and Critical Source Areas e.g. farm race runoff
- 2009-2015: Rerewhakaaitu catchment plan and individual farm Nutrient Management Plans with AgResearch; audit actions and report progress
- 2015: Group formalised as Incorporated Society; input to Tarawera Lakes Restoration Plan
- 2016 onwards: Engage with BOPRC and industry on implementing Restoration Plan
- Informal discussions on potential plan change and land use rules...



FRUITION  
Horticulture

agresearch  
Farming Food and Health. First™

ROTORUA DAILY POST

### Lake clean-up project recognised

5 Jun, 2015 10:49am

© 2 minutes to read



Two of Project Rerewhakaaitu's founding members were in Wellington at the awards ceremony last night.  
Photo / NZME.

Rotorua Daily Post



### Nutrient Management Plan for Demo Farm





# Tarawera Lakes Restoration Plan

- **Tarawera Inner Lake Catchment**

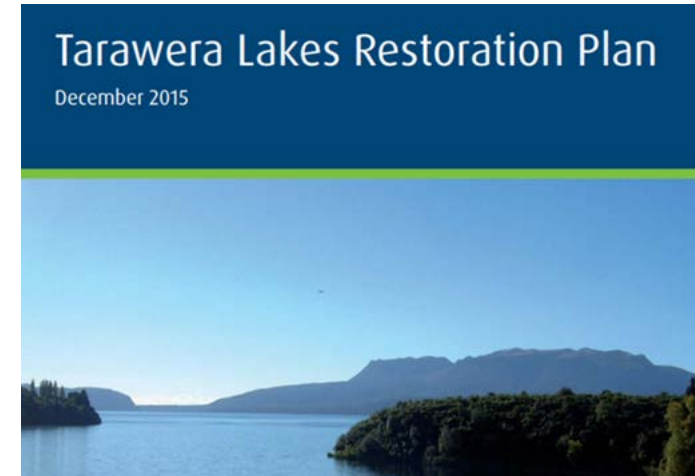
- Actions 1: Tarawera wastewater
- Action 2: Land management via farm plans
- Action 3: Control of N fixing plants

- **Outer Catchment Tarawera Lakes 2016**

- Action 4: Land management via farm plans

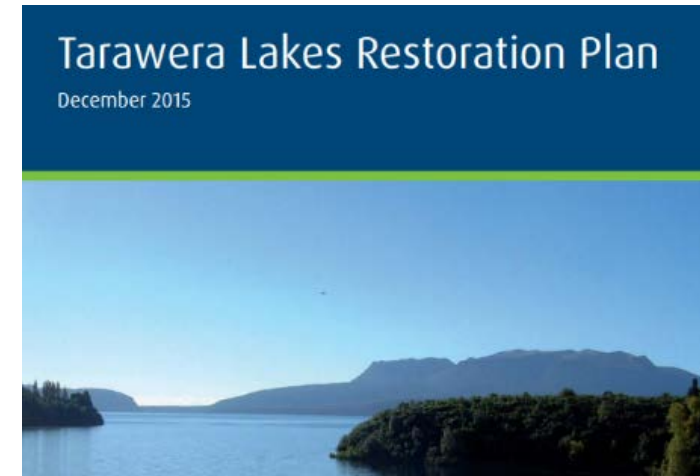
- **Whole Catchment**

- Action 5: Develop rule to limit land-use change that increase nutrients in the Tarawera System.
- Action 6: Groundwater modelling
- Action 7: Cultural health assessment
- Action 8: Geothermal source investigation
- Action 9: Consolidation of science (minor sources)
- Action 10: Informed community on science



# Tarawera Farm Environment Plans, preparing for the future

- **2016 FEP project prep:**
  - BOPRC liaison with Project Rerewhakaaitu, industry
  - Target 50 FEPs + aggregated N and P Overseer data
  - Farmers agree to use 'industry template' FEPs
- **2017 FEP roll out:**
  - Fonterra: Tiaki, Sustainable Dairy Advisors, \$ saving
  - B+LNZ: 2 Land & Environment Plan (LEP) workshops
  - BOPRC: Perrin Ag & AgFirst 1:1 follow up on LEPs
  - Farm data confidentiality forms
  - Selected Overseer file reviews by BOPRC
- **2018 project completion**
  - Complete FEPs & Overseer
  - Fonterra and B+LNZ aggregate Overseer data
  - Results presented to farmers



# Results - Drystock

- 16 farms, 6829 ha total, 5549 ha effective, ~350 ha each, rain 1300-1600 mm/yr
- Systems: sheep, beef, dairy grazing, deer and combinations
- N & P loss rates, effective area only, Overseer v6.3.0

Catchment	kg N/ha/yr	Kg P/ha/yr
Tarawera	22	3.7
Rotokakahi	18	3.9
Okaro	23	2.0
Rotomahana	16	1.3
Rerewhakaaitu	32	1.2
Rangitaiki	34	1.1



Soil Order	Pasture		Fodder crop		Combined	
	kg N/ha/yr	Kg P/ha/yr	kg N/ha/yr	Kg P/ha/yr	kg N/ha/yr	Kg P/ha/yr
Recent (69%)	22	2.2	90	1.5	23	2.2
Allophanic (6%)	18	0.5	-	-	-	-
Pumice (25%)	26	1.6	106	2.4	28	1.7

# Results - Dairy

- 32 farms, 5352 ha total area, results below for 3 catchments (3390 ha eff.)
- N & P loss rates, Overseer v6.3.0

Catchment	Dairy effective area only		Dairy support area only		Total area	
	kg N/ha/yr	Kg P/ha/yr	kg N/ha/yr	Kg P/ha/yr	kg N/ha/yr	Kg P/ha/yr
Rerewhakaaitu	64	1.7	51	3.7	58	1.8
Rotomahana	51	1.3	34	1.8	46	1.3
Rangitaiki	57	2.5	35	3.8	54	2.5

- N loss range mid-30s to low-90s, most in 40-60 band
- Over 1000 individual actions

## Observed higher risk N loss activities

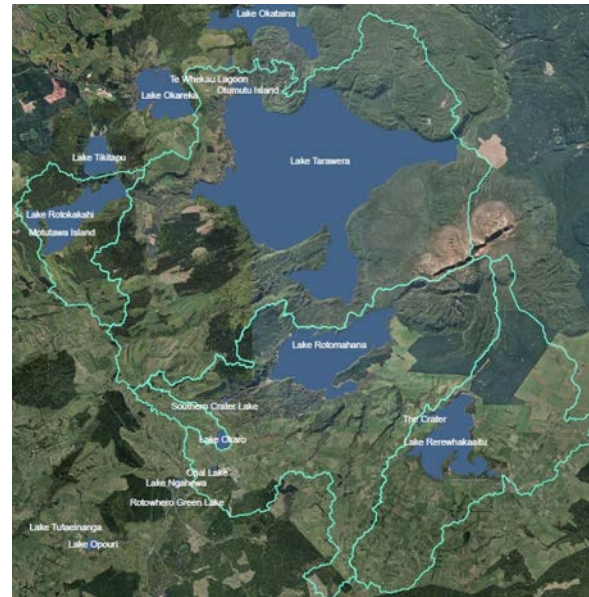
- Undersized effluent areas
- N use in May, June & July
- Winter cropping and winter stock management





## The (near) future

- Ongoing FEP implementation by farmers
  - Plus April 2018 storm recovery...
- Fonterra follow-up over 2 years, upgrade FEPs as needed
- B+LNZ support via its Environment Strategy
- BOPRC incentives for on-farm works
- Waikato University using N and P data to build combined Tarawera lakes catchment model
- BOPRC land use rules?
  - NPS-FM info gathering ongoing





# Tarawera FEP project – conclusions

- 48 FEPs out of 51 in a voluntary project
- Projects evolve, delays happen
  - Good communications essential
- Industry FEP templates are pragmatic, adaptable
- Collating confidential farm nutrient data is challenging
  - not linked to earlier nutrient data
- **Need to maintain momentum and farmer communication:**
  - **Catchment modelling and potential rules**
  - **FEP implementation**
- **Keep building on positive ethos amongst farmer community**

## Project Rerewhakaaitu

