



# 2021-22 SCHEME MEETINGS

South Eastern Ruahine Scheme



## REGIONAL OVERVIEW

- Current operating budget \$14.3M
- 40 Staff
- 34 Schemes provide protection from flooding and erosion to:
  - 11 urban areas
  - 75,00ha rural land







# HORIZONS RIVER MANAGEMENT

## REGIONAL OVERVIEW

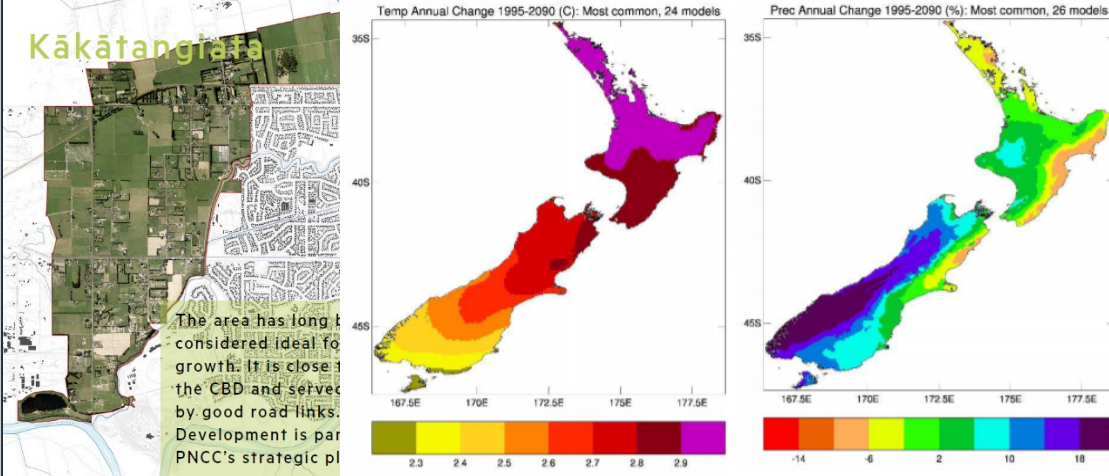
\$650M of assets

- 1,270km of river channel
- 1,100km of drain
- 23 pump stations with a total discharge capacity of 43m<sup>3</sup>/s
- 54 detention dams that can store 4.3M cubic metres of floodwater
- 500km of stopbanks



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# SIGNIFICANT RIVER MANAGEMENT ISSUES

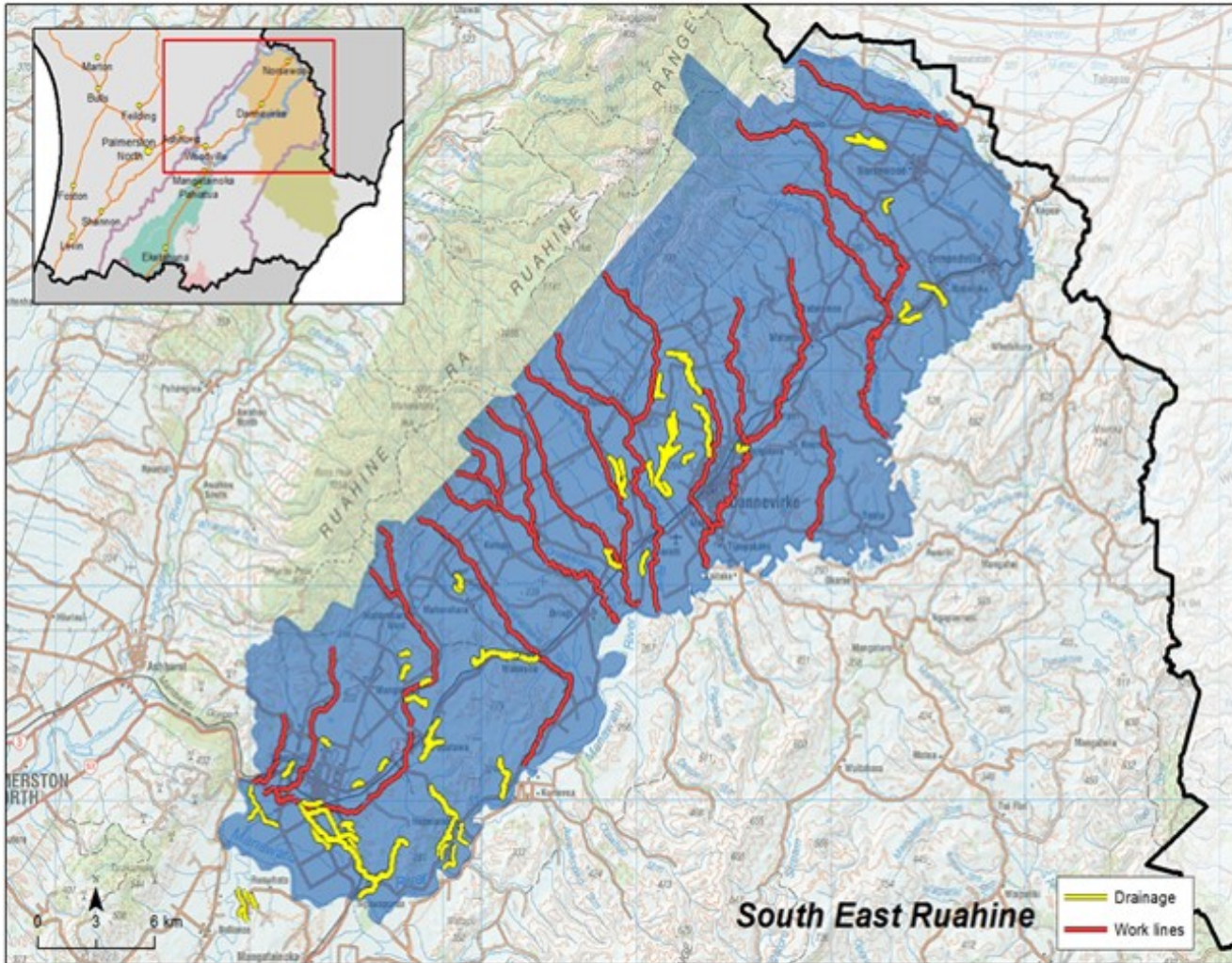
## REGIONAL OVERVIEW

- Accelerating land use change
- Unsustainable land use
- Climate change
- Asset reliability
- Evolving community expectations









# SOUTH EASTERN RUAHINE SCHEME

- 21 streams
- 64,543ha.
- Predominantly dairy and horticultural land.
- Total Asset Value: \$24,826,808

## Scheme Assets:

57km Tied tree work  
 775 ha Protection planting  
 22 ea Weirs  
 1 ea grade control  
 16km Stopbanks  
 1950m PMU's  
 83km drainage channels  
 3.2km Permeable groyne  
 1864 tonnes rock lining  
 562 m Stock gates  
 19m Timber retaining wall



# SOUTH EASTERN RUAHINE SCHEME STRATEGIC DIRECTION

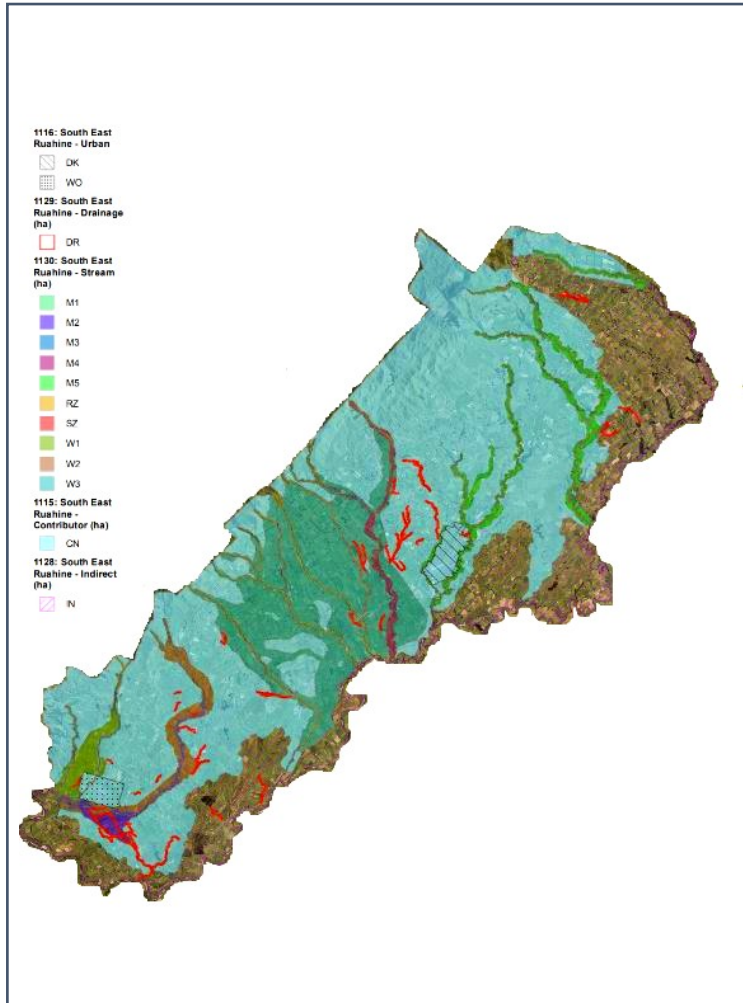
The focus of the Scheme over the next year is to continue to maintain existing infrastructure in order to meet the expectation of the local community for channel maintenance, flood protection, drainage and recreational use.

This includes managing gravel and general channel condition in the streams/ivers by maintaining the desired channel alignment and minimizing lateral erosion.

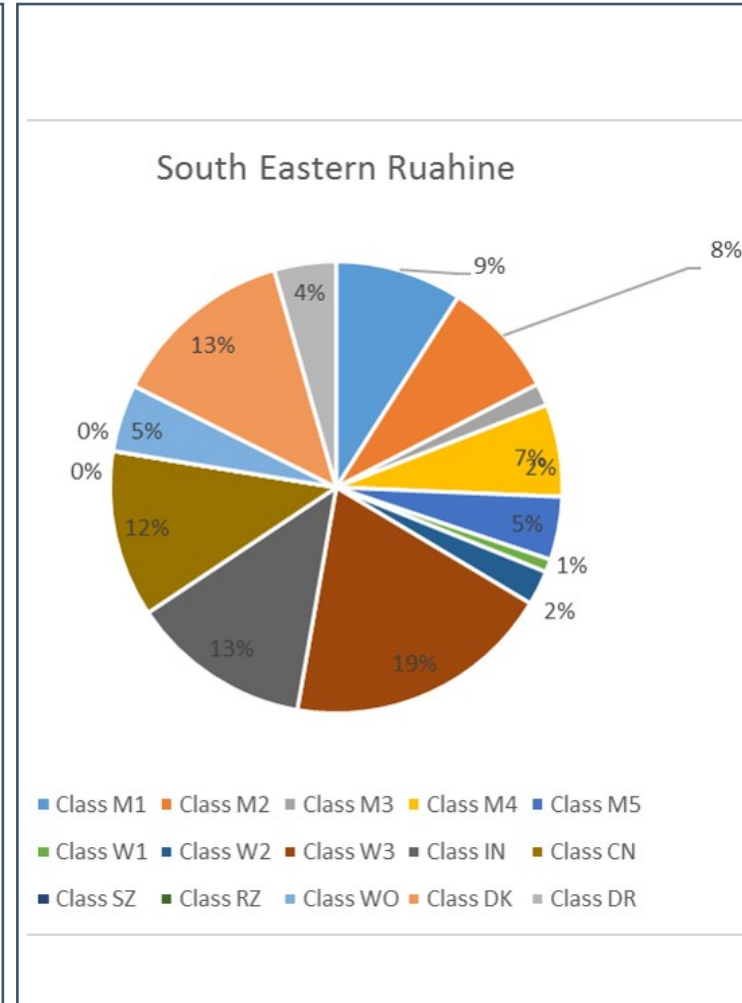
## Scheme Aims for Service Level

- Ensure assets are managed in a consistent, efficient and sustainable manner.
- Maintain stream/river alignment in order to minimize river bank erosion.
- To contain flood flows not exceeding 20% AEP within stopbanks to protect certain stream reaches of the South eastern Ruahine scheme.
- Maintain drainage capacity that facilitates maintenance of the groundwater levels.





South Eastern Ruahine scheme rating map



South Eastern Ruahine scheme rates breakdown by proportion of total funding

# SOUTH EASTERN RUAHINE SCHEME FUNDING

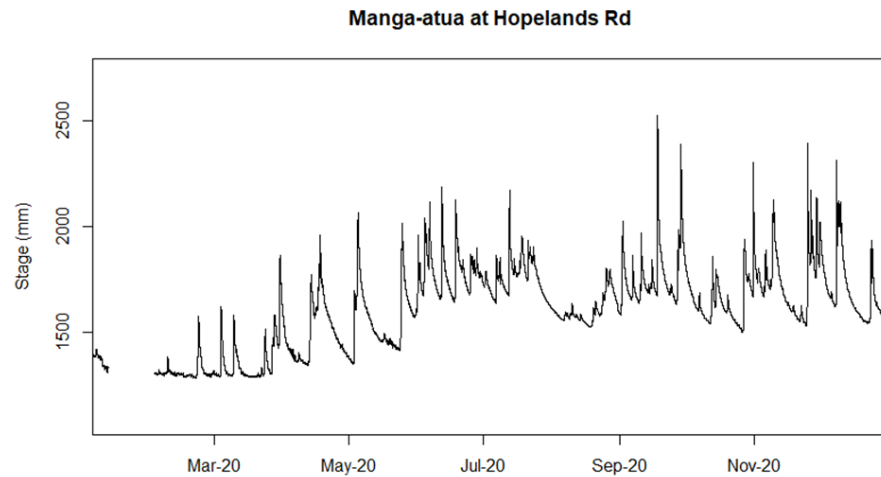
The Schemes funding comes from three revenue sources:

- Targeted Rates – differential targeted rates levied on properties directly benefiting from or causing the need for the work. 80% of scheme cost.
- General Rates – uniformed rate levied over all properties in the Horizons Region. 20% of the scheme cost.
- Other income – Revenue from scheme reserves, etc. held by the scheme. This is used to reduce the level of the targeted rate.

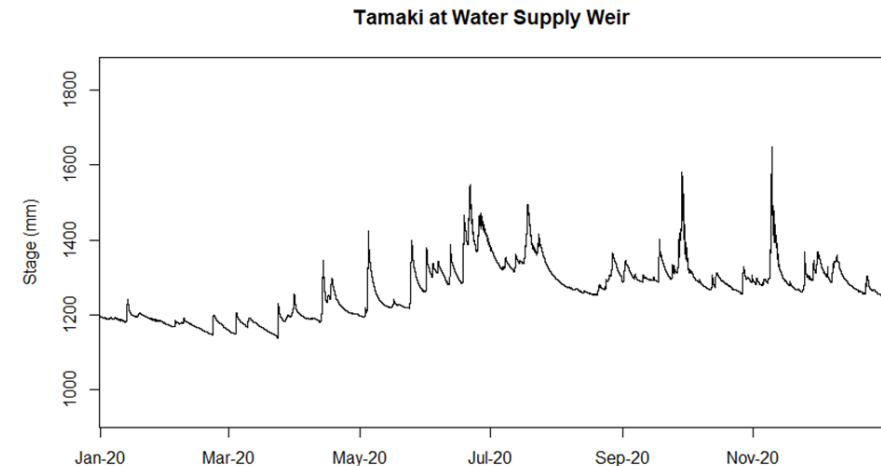


# SOUTH EASTERN RUAHINE SCHEME HYDROLOGY

River Management works reflect the behaviour of water flowing in the river. High flow events (hydrological peaks) will generally result in higher rates of erosion.



River gauging at Hopelands 2020-2021. Peaks indicate high flows.



River gauging at Water Supply Weir 2020-2021. Peaks indicate high flows.



Manga-atua at Hopelands – AEP Flows

Return Period		Flood Flow
2 year	50% AEP	64 m3/s
5 year	20% AEP	86 m3/s
20 year	5% AEP	106 m3/s
50 year	2% AEP	115 m3/s
100 year	1% AEP	120m3/s

Manga-atua at Hopelands - Annual Maximum stage (water height) 2008-2020

Year	Stage	Flow	Date
2008	NA	NA	2008-01-08
2009	NA	NA	2009-12-27
2010	2.134	79	2010-09-06
2011	3.094	75	2011-11-09
2012	2.796	51	2012-03-01
2013	2.975	65	2013-09-11
2014	2.385	24	2014-12-10
2015	3.612	110	2015-06-19
2016	2.749	47	2016-11-11
2017	3.153	88	2017-02-02
2018	3.059	77	2018-03-09
2019	3.30	107	2019-06-13
2020	2.526	32.638	2020-09-18

Tamaki at Supply Weir – AEP Flows

Return Period		Flood Flow
2 year	50% AEP	42 m3/s
5 year	20% AEP	70 m3/s
20 year	5% AEP	121 m3/s
50 year	2% AEP	167 m3/s
100 year	1% AEP	209m3/s

Tamaki at Supply Weir - Annual Maximum stage (water height) 2008-2020

Year	Stage	Flow	Date
2008	1.876	45	2008-01-08
2009	1.653	18	2009-12-27
2010	1.905	49	2010-09-06
2011	2.053	75	2011-10-26
2012	1.961	58	2012-12-30
2013	1.959	58	2013-09-11
2014	2.021	69	2014-12-10
2015	2.026	70	2015-06-19
2016	1.622	15	2016-02-19
2017	2.169	97	2017-02-03
2018	2.117	87	2018-03-08
2019	1.527	82	2018-06-13
2020	1.650	17.823	2020-11-10

# SOUTH EASTERN RUAHINE SCHEME HYDROLOGY

The likelihood of a flood event of a given size is described by the Annual Return Period (AEP).

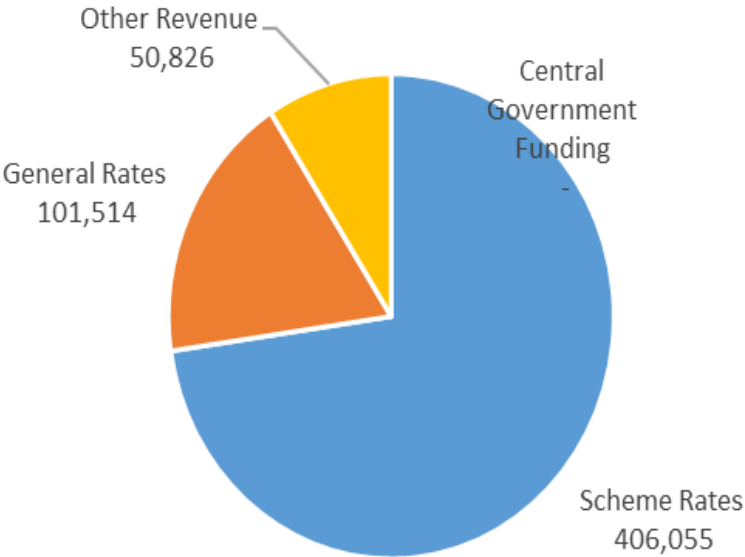
River management assets such as are generally maintained with the aim to withstand a 5% AEP.

5% AEP describes a flood that is estimated to occur every 20 years, or has a 5% chance of occurring in any given year.

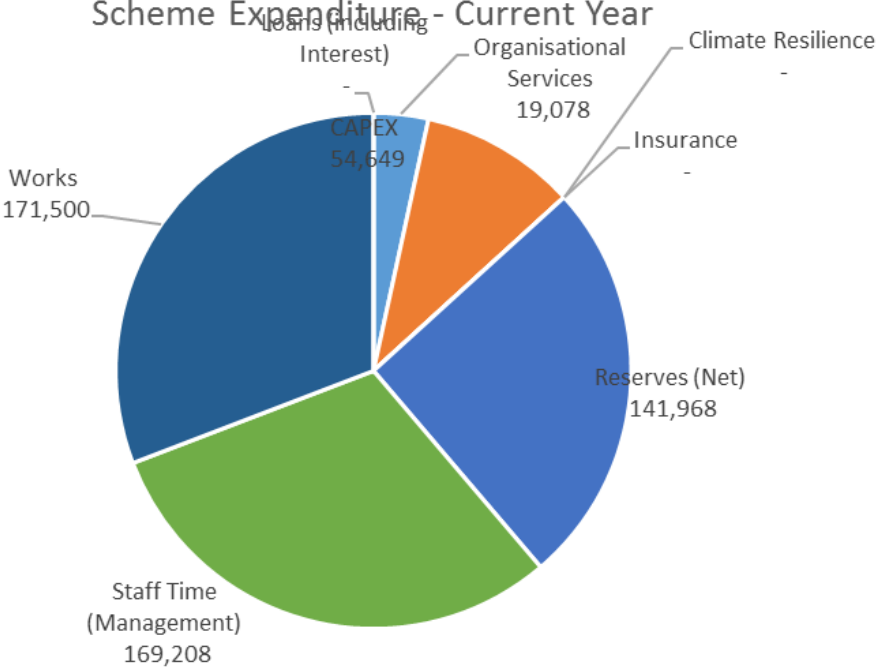


# SOUTH EASTERN RUAHINE SCHEME INCOME AND EXPENDITURE 2020-2021

Scheme Revenue - Current Year



Scheme Expenditure - Current Year





# KEY ACTIVITIES AND ISSUES: 2020-21

## OPEX Works

Channel clearance and vegetation management has constituted most of the activity on the scheme this year. There has been a continuation of the mulching and channel clearing works on the Kumeti River and work started briefly on the Mangatera Stream. The lower reach of the Manga-Atua is programmed for mulching this financial year.

## CAPEX Works

Asset renewal/replacement and the creation of new assets on the scheme due to flood damage and remedial repairs. The largest work was undertaken on the Tamaki. Works are planned for Kumeti No.7 Weir and a rocklining on the Little Oruakeretaki

## Drain Cleaning

9 Drains are programmed for mechanical cleaning if required this financial year. The drains will be sprayed this autumn.

## Scheme Expenditure

Opex Works:	\$150,500	+40,000
Capex Works	\$54,649	
Channel Maintenance	\$40,000	
Drain Cleaning	\$20,000	
Staff Costs (inc overheads)	\$169,208	
Organisational Costs	\$19,078	
Reserves	\$111,968	-40,000

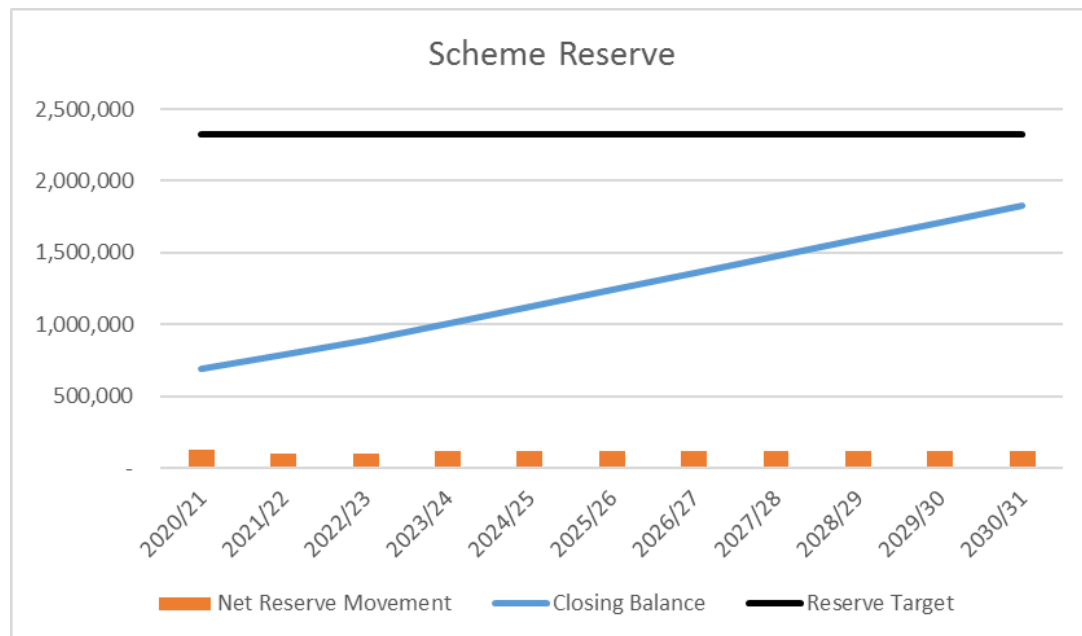
Predicting an additional Opex spend to complete works this year which will be off set by a reduction in reserves revenue.

## Issues

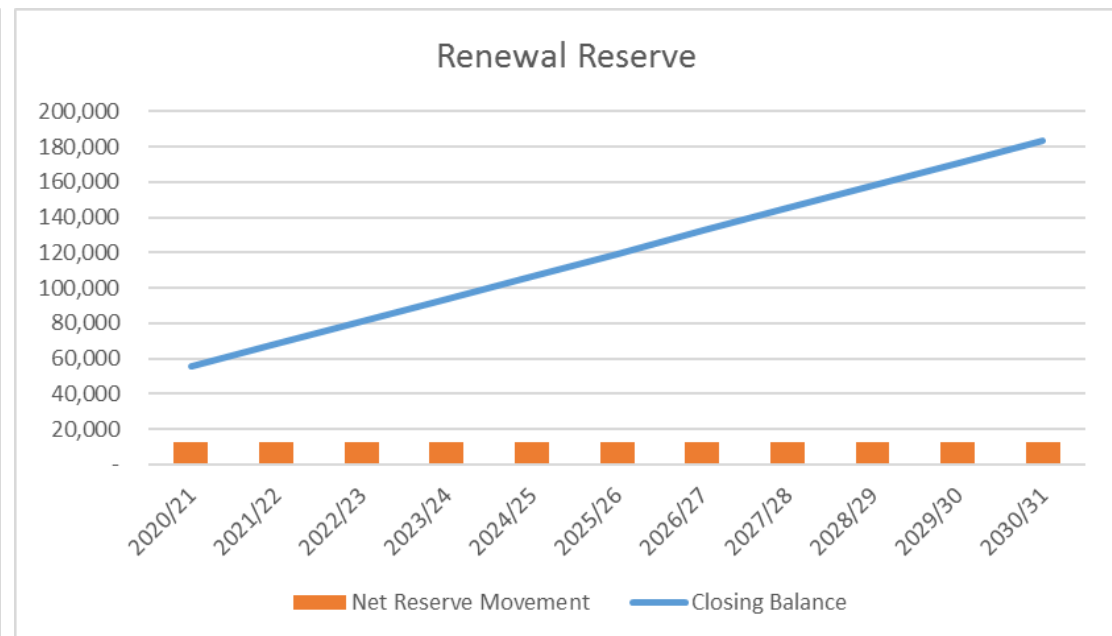
- Iwi Liaison – more work required in this area around Dannevirke Township
- New NES-FP will introduce financial challenges to scheme.



# SOUTH EASTERN RUAHINE SCHEME EMERGENCY RESERVE BALANCE – 30 JUNE 2020



Closing Reserve Balance – \$561,308 (\$2,320,000)



Closing Renewal Reserve Balance - \$43,011



# SOUTH EASTERN RUAHINE SCHEME WORKS 2020-21

Vegetation and channel  
management

- Willow removal to increase channel capacity
- Channel shaping to reduce bank attack





# SOUTH EASTERN RUAHINE SCHEME WORKS 2020-21

Asset maintenance

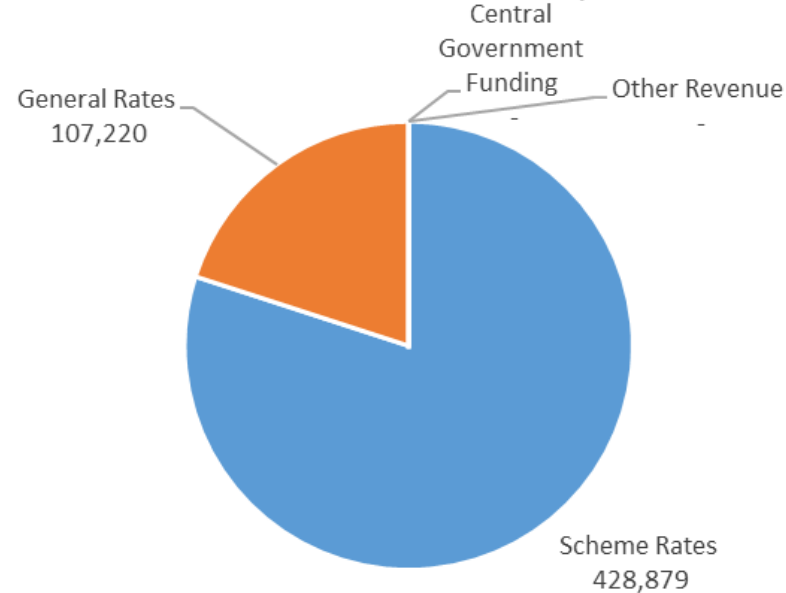
- Upgrading weir
- Bank protection works



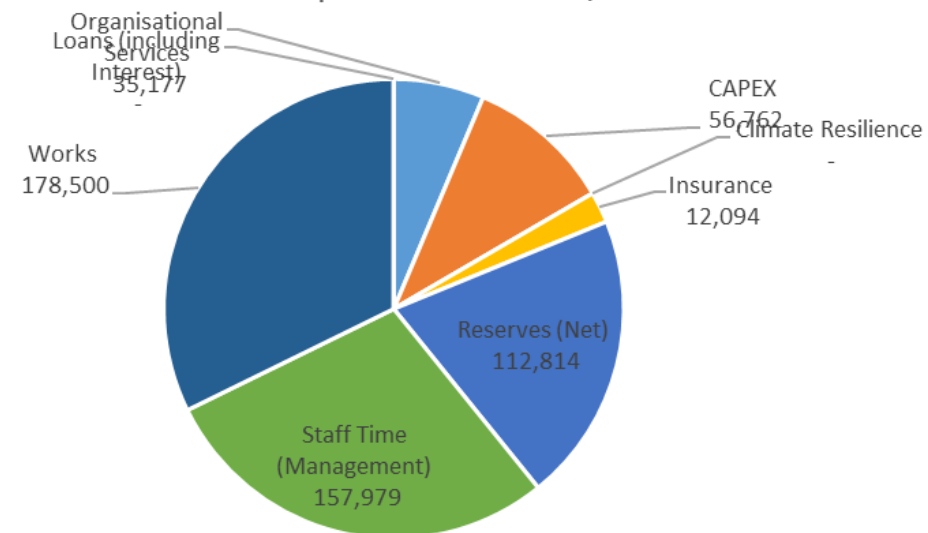
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# SOUTH EASTERN RUAHINE SCHEME INCOME AND EXPENDITURE 2021-2022

Scheme Revenue - 2021/22



Scheme Expenditure - 2021/22





# FORECAST ACTIVITIES AND ISSUES: 2021-22

## OPEX Works

Large amounts of Channel Clearance and Channel Shaping will continue to open up beds and increase carrying capacity. Excess willow removal will continue in areas where protection planting areas are overgrown and/or unnecessary.

## CAPEX Works

Work to begin on Stopbank upgrades on the Raparapawai and Manga-Atua.

Ongoing upgrades to weirs in the scheme for both repair and to start meeting fish passage requirements.

## Drain Cleaning

Mechanical Clearing schedule will continue alongside annual drain spraying.

An initial spray in Spring and a following spray in Autumn is on the cards to get vegetation under control in those drains that are well shaped and otherwise stable.

## Scheme Expenditure

• Opex Works:	\$118,500
• Capex Works	\$56,762
• Channel Maintenance	\$40,000
• Drain Cleaning	\$20,000
• Staff Costs (inc overheads)	\$157,979
• Insurance	\$12,094
• Organisational Costs	\$35,177
• Reserves	\$112,814

Scheme rates will increase by 5.62% in 2021-22

## Review

- Scheme Review begins this year – this will determine the ongoing nature of the scheme.

## Issues

- Continuing work around NES-FP





# ORANGA WAI - OUR FRESHWATER FUTURE

Implementing Government's 'Essential Freshwater' package



# OVERVIEW

Government has introduced new requirements for managing the health of freshwater in New Zealand, including:

- Changes to the Resource Management Act 1991 (RMA)
- An updated National Policy Statement for Freshwater Management 2020 (NPS-FM)
- New National Environmental Standards for Freshwater (NES-FW)
- Additional new regulations under s360 of the RMA for:
  - Measuring and Reporting of Water Takes; and
  - Stock exclusion

Some of these changes come into effect immediately (from gazettal 3 August 2020), while others are phased in over time.



# **NATIONAL ENVIRONMENTAL STANDARDS FOR FRESHWATER & REGULATIONS**



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# THE TASK AHEAD

Regional councils are required to:

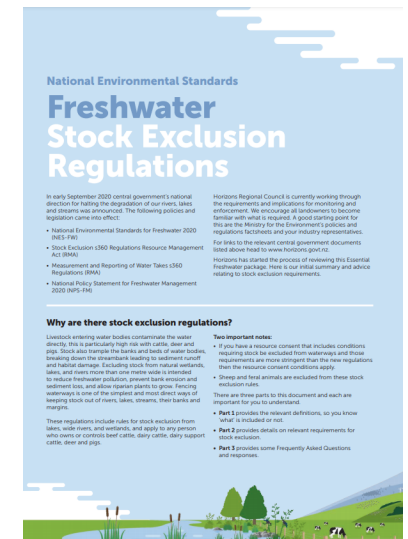
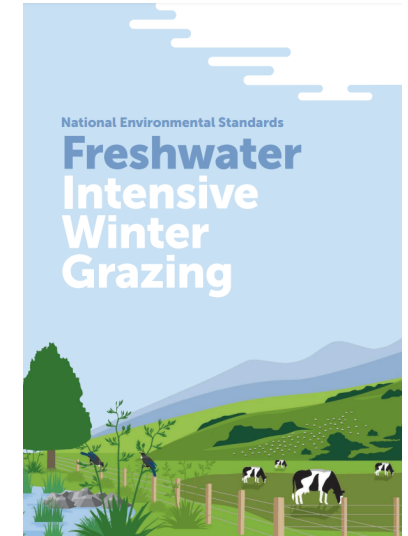
- Issue and monitor consents relating to intensification of land use (until the end of 2024), intensive winter grazing\*, stock holding areas and feedlots – all come into effect from mid-2021, and activities that have more than a minor impact on wetlands and streams (effective from 3 Sep 2020).

\*Land owners seeking consent for intensive winter grazing need to work directly with iwi/hapū.

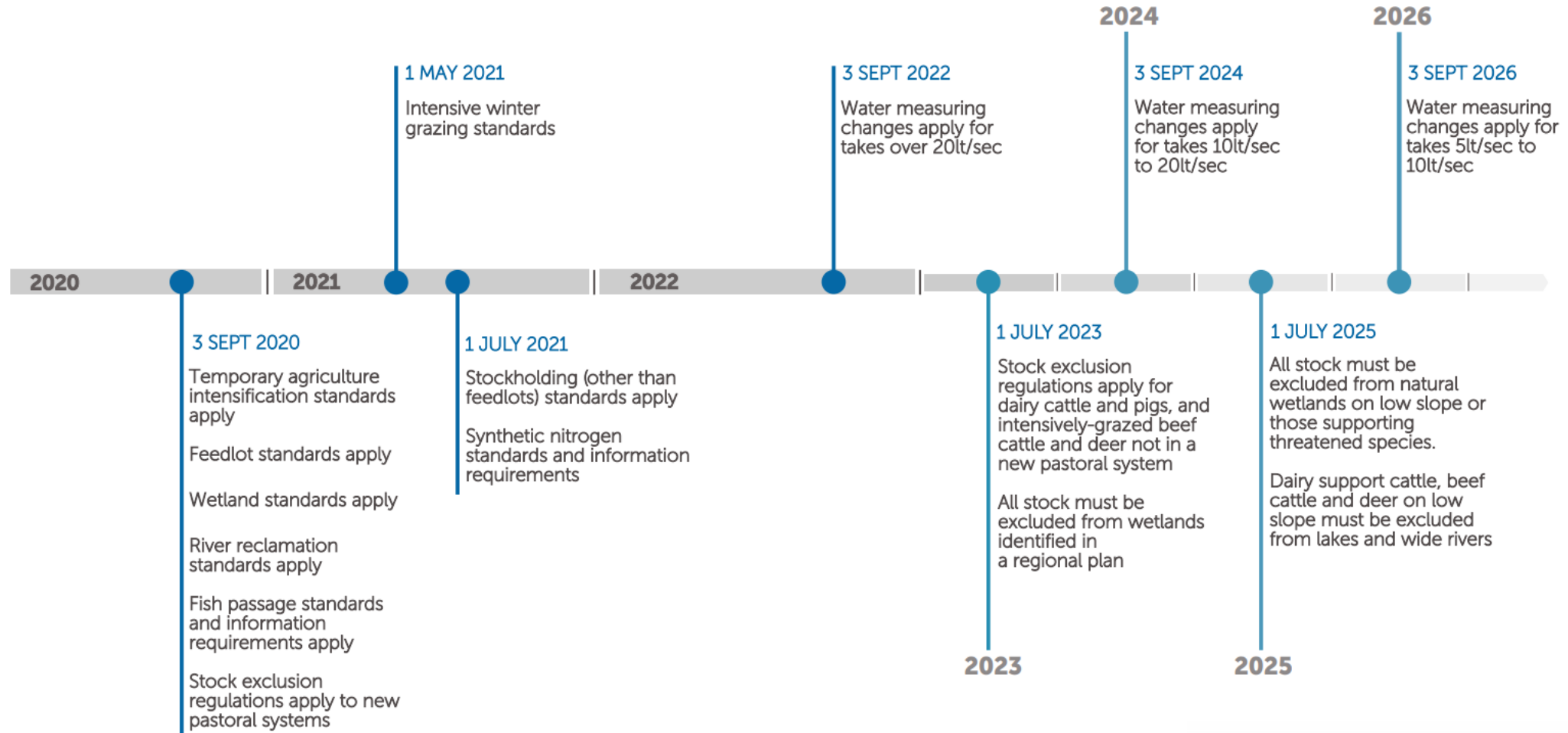
- Collect data and monitor levels of synthetic nitrogen fertiliser use
- Stock exclusion (dairy and beef cattle, pigs and deer) from wetlands, streams and their margins (>1m wide); requirements for bridges and culverts, phased in over time
- Real time monitoring and reporting of water takes >5 l/s

Also coming:

- Mandatory freshwater modules in farm plans (currently in draft)



# New National Freshwater Rules





# **NATIONAL POLICY STATEMENT FOR FRESHWATER MANAGEMENT (NPS-FM)**



[horizons.govt.nz](https://horizons.govt.nz)

# NATIONAL POLICY DIRECTION

Aim is to halt waterway degradation within 5 years and improve water quality within a generation

NPS-FM introduces new (or updated) requirements including:

- Managing freshwater in a way that 'gives effect' to Te Mana o te Wai.
- Improving degraded water bodies, and maintaining or improving all others applying 'national bottom lines'.
- Compulsory values: ecosystem health, human contact, threatened species and mahinga kai, plus other values we must consider
- We must use the best information available including, where practicable, complete and scientifically robust data, but not refrain from decision making on the basis of uncertainty.
- Monitor and report annually on freshwater (including the data used); publish a synthesis report every five years containing a single ecosystem health score and respond to any deterioration.

## What is a National Policy Statement?

In essence, national policy statements prescribe objectives and policies for local authorities for matters of national significance.

In some cases they provide direction as to how local authorities give effect to those policies and objectives.

This includes the NPS-FW and will likely include the NPS for Indigenous Biodiversity to be released in 2021.



# TE MANA O TE WAI

6 principals:

- Mana whakahaere
- Kaitiakitanga
- Manaakitanga
- Governance
- Stewardship
- Care and respect

Hierarchy of obligations:

1. The health and well-being of water bodies and freshwater ecosystems
2. The health needs of people (such as drinking water)
3. The ability of people and communities to provide for their social, economic and cultural well-being, now and in the future

Read MfE's [Te Mana o te Wai factsheet](#) or watch their [brief explainer videos](#)



Figure 1: How regional councils must give effect to Te Mana o te Wai

# THE TASK AHEAD

Regional councils are required to:

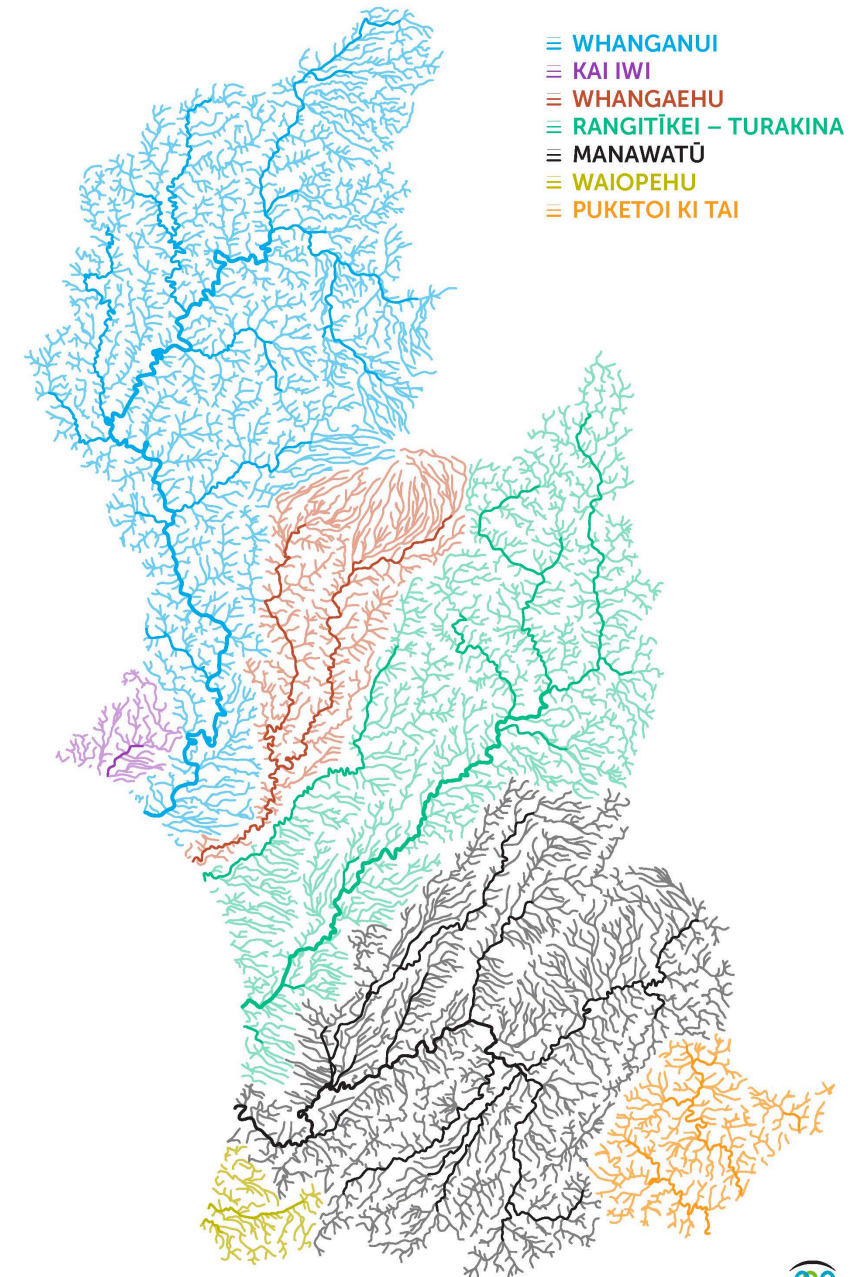
- engage with communities and tangata whenua to:
  - set our long-term vision (30 years and beyond);
  - implement the National Objectives Framework (NOF); and
  - report on progress towards this vision.
- map existing wetlands and encourage their restoration; address in-stream fish barriers

For each Freshwater Management Unit (FMU) we must identify:

- our values and vision for freshwater
- environmental outcomes (for each value), attributes (and their baseline and target states); and
- set limits and/or prepare action plans to achieve environmental outcomes.

We must use the best information available including, where practicable complete and scientifically robust data, but not refrain from decision making on the basis of uncertainty.

Monitor and report annually on freshwater (including the data used); pull a synthesis report every five years containing a single ecosystem health score and respond to any deterioration.





# NATIONAL OBJECTIVES FRAMEWORK (NOF)

**Table 5 – Ammonia (toxicity)**

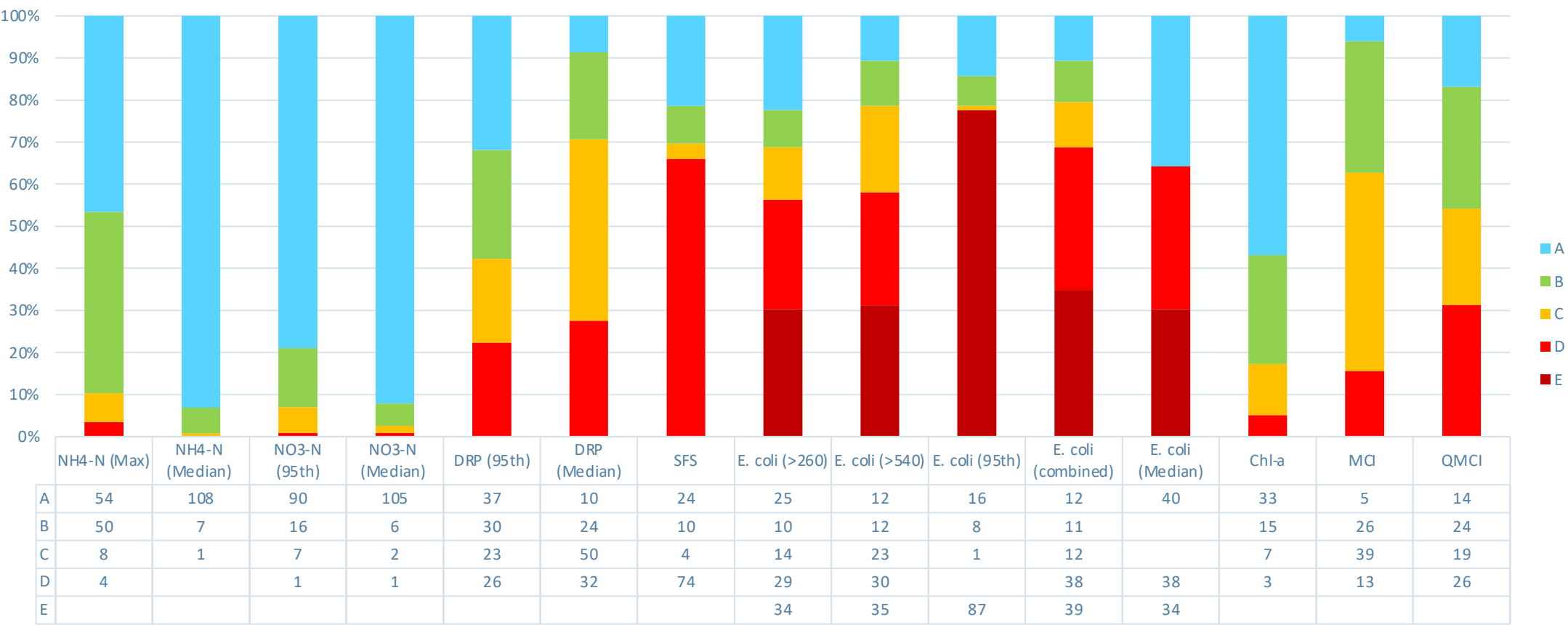
Value (and component)	Ecosystem health (Water quality)	
Freshwater body type	Rivers and lakes	
Attribute unit	mg NH <sub>4</sub> -N/L (milligrams ammoniacal-nitrogen per litre)	
Attribute band and description	Numeric attribute state	
	Annual median	Annual maximum
<b>A</b> 99% species protection level: No observed effect on any species tested.	≤0.03	≤0.05
<b>B</b> 95% species protection level: Starts impacting occasionally on the 5% most sensitive species.	>0.03 and ≤0.24	>0.05 and ≤0.40
<b>National bottom line</b>	<b>0.24</b>	<b>0.40</b>
<b>C</b> 80% species protection level: Starts impacting regularly on the 20% most sensitive species (reduced survival of most sensitive species).	>0.24 and ≤1.30	>0.40 and ≤2.20
<b>D</b> Starts approaching acute impact level (that is, risk of death) for sensitive species.	>1.30	>2.20

Numeric attribute state is based on pH 8 and temperature of 20°C. Compliance with the numeric attribute states should be undertaken after pH adjustment.

- 22 attributes that provide for identified values (compulsory and non-compulsory)
- Some require limits to be set, others require action plans to address issues.
- Most have a 'national bottom line' set above the 'C' or 'D' band.

# CURRENT STATE – SOE SITES

State of Environment Sites - NOF Assessment





# LOTS OF WORK TO DO...

- Lots of new regulations
- More consultation and collaboration with tangata whenua, communities and industry
- Greater demand on iwi, Horizons, primary sector and industry, to provide guidance, and much more consent and compliance work
- New and expanded monitoring and reporting requirements (particularly for DO, fish, deposited sediment etc,)
- More data and information collection and sharing
- Establish limits and/or action plans to address water quality issues
- Ready ourselves to notify a plan change by Dec 2024
- Lots of work to do yet to meet with central and local government, iwi/hapū, primary sector reps, stakeholders to work through the details and interpretations, and communicate these with the wider community and write them into policy
- Further changes to come – NPS for indigenous biodiversity, implementing National Planning Standards, RM reform...

# HORIZONS HELP AND GUIDANCE

## Events and information:

Hui-a-iwi (twice a year) + three-weekly freshwater hui from late Feb 2021

[e-newsletters](#), guidance documents and brochures, social media,

Events: Manawatu River Improvement Festival – Sat 27 February, Rural Games – Fri 12-Sun 14 March, Central Districts Field Days – Thu 18-Sat 20 March, Community and scheme meetings

Check out our website: <https://www.horizons.govt.nz/managing-natural-resources/our-freshwater-future>

Please direct enquiries to [info@ourfreshwaterfuture.nz](mailto:info@ourfreshwaterfuture.nz)



**Oranga Wai** | **OUR Freshwater FUTURE**



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