



**Meeting:** Te Maru o Kaituna River Authority

**Meeting Date:** 15 November 2024

---

## **Presentations and Tabled Document**

---

<b>Agenda Item 8.1</b>	<b>Taheke 8C - Proposed hydro project</b>	
	<b>Presentation - Taheke 8C - Proposed hydro project</b>	<b>2</b>
<b>Agenda Item 8.3</b>	<b>Kaituna Re-diversion Annual Report</b>	
	<b>Presentation - Kaituna Re-diversion Annual Report</b>	<b>8</b>
<b>Agenda Item 10.1</b>	<b>Updates from Partners</b>	
	<b>Tabled Document - Bell Road - former NZTA (Waka Kotahi) land</b>	<b>27</b>



# Taheke Hydro Project










Presentation to  
Te Maru o Kaituna Authority

Item 8.1, Presentation





# Effects Assessment Underway

 Hydrology	 Geomorphology	 Landscape and Visual Assessment
 Ecology	 Benefits	 Archaeology
 Recreation	 Cultural	 Planning



## Potential Enhancement Projects within the design



**The island project:** this is the large area between the river and canal. The river and canal will act as natural barriers to most pests although ongoing pest control will be required. There is opportunity to create, protect and continually improve a large area of indigenous habitat for existing or previously existing but declining species such as bats, lizards, king ferns etc. It is intended to plant the area with locally sourced indigenous plant species from surrounding iwi run nurseries.



**Mahinga kai projects:** this is likely to be a multi-faceted project with different focus areas, including the intake area, canal and storage area providing for a calmed location where “put and take” fishery projects can be established. There is also opportunity to incorporate traditional techniques and materials which will then flow into educational opportunities for rangatahi to learn about traditional ways and may also support local Māori economy. Ideas include Tau Koura and Hinaki + potential for Kākahi habitat in canal area.



## Next Steps



- Taheke 8C will be consulting with iwi directly, local and regional authorities and with other key stakeholders



- We will be finalising our design options and effects assessments with feedback from those hui



- We will be finalising our consenting approach and application



- We will be continuing to engage with the members of Te Maru o Kaituna as we develop opportunities for enhancing the ecosystem of the awa and its mauri.



- We welcome opportunities to continue to kōrero

# Taheke Hydro project

(A component of the Taheke Green Energy Hub)

Māori Incorporation Taheke 8C to seek consent for its second renewable project: The Taheke Hydro Project.

Complementing Taheke 8C's Geothermal Project, together the Taheke Hydro Project form the cornerstones of the Taheke Green Energy Hub, utilising the renewable generation available to it from its land and resources to build a better future for its people, the local community and the Bay of Plenty Region.

This project has a peaking generation and storage design.

For up to 8 hrs a day the Taheke Hydro plant will provide up to 35MW peaking generation, with 11MWh off peak, totalling up to 85GWh of generation annually. Greater than other hydrogeneration nationally, this project will have a utilisation rate of approx. 95% with an est. 65 weeks of natural lake storage, augmented by canal storage. This project will provide significant energy security to a region that imports over 80% of its energy needs.

We are transmission and offtake ready.

Three high voltage overhead transmission lines run through Taheke 8C land (Transpower's 220 kV Edgecumbe to Tarukenga line/110 kV Okere to Te Matia A line). Taheke 8C is talking to Transpower and proposes using its new substation to connect both the Geothermal and Hydro Projects. Taheke is talking now with electricity retailers to agree power purchase arrangements for both the Geothermal and Hydro Projects.

This project is moving forward. The Resource Consent Application for the Taheke Hydro Project will be ready to file by December 2024.

We have a world-class team of experts engaged on this project doing the work now. We seek inclusion in the Fast Track Bill. Inclusion will mean this project will meet the timetable for completion of consent and commencement of construction before 2026.

Taheke is experienced and we have identified partners to work with us.

We have an Agreement in Principle in place with an international experienced generation partner - Chogoku Electric Co. and will complete arrangements this year.

We are engaging and consulting with key stakeholders now.

These include iwi/hapu on the river, local authorities and government agencies (incl. Transpower).

Taheke 8C boundary

Canal alignment

Switchyard connection

Transpower transmission lines

Note: Graphic is illustrative only, not to scale

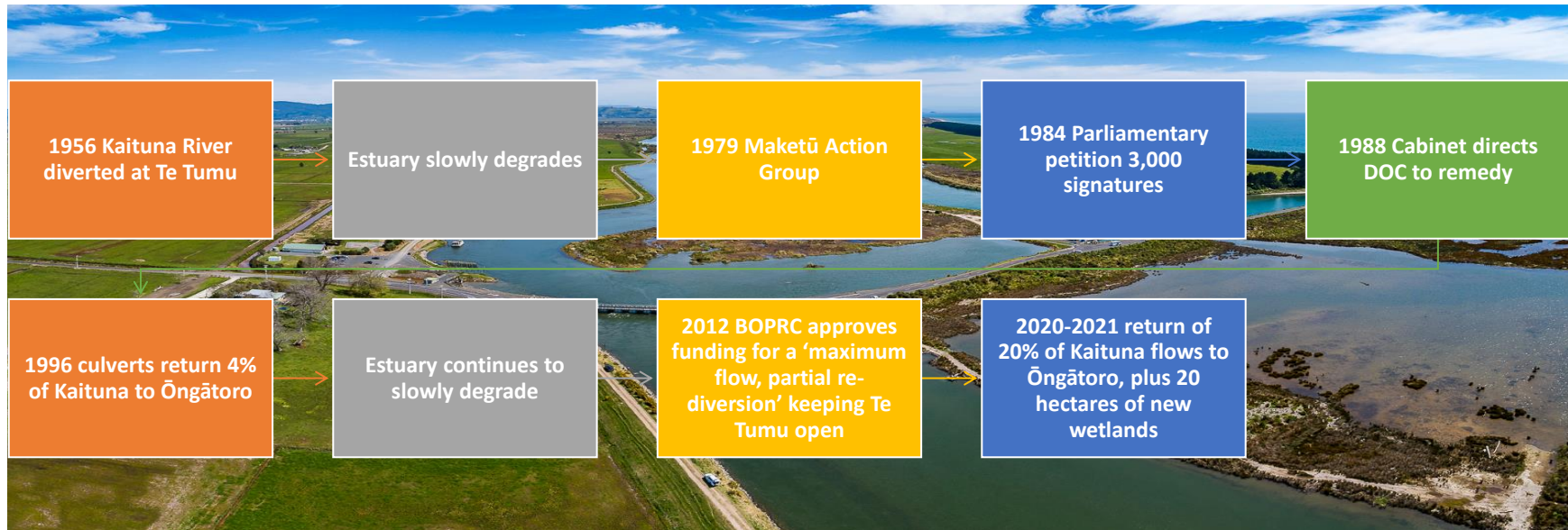
# Hoki mai te Kaituna ki Maketū



Item 8.3, Presentation



# Kaituna Re-diversion Project









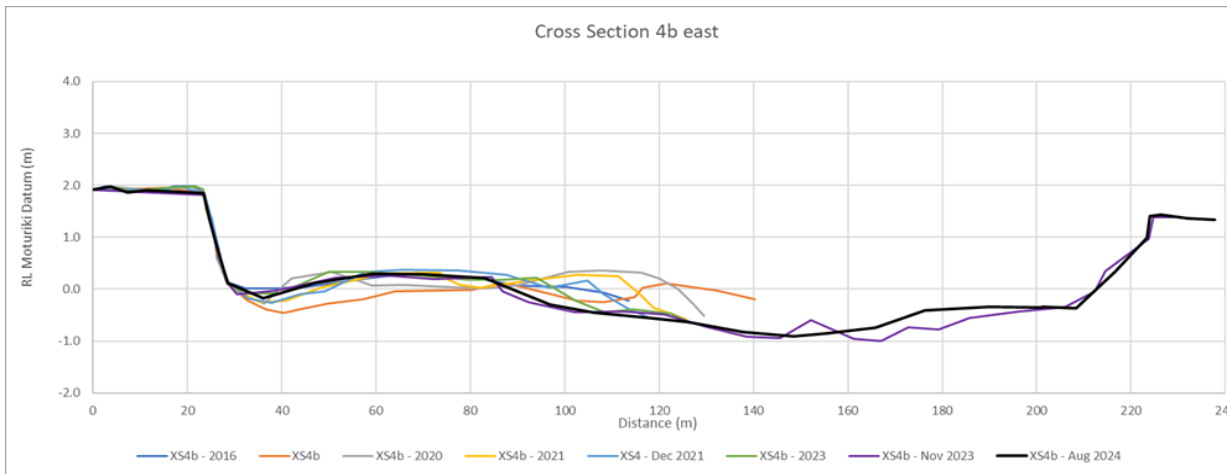
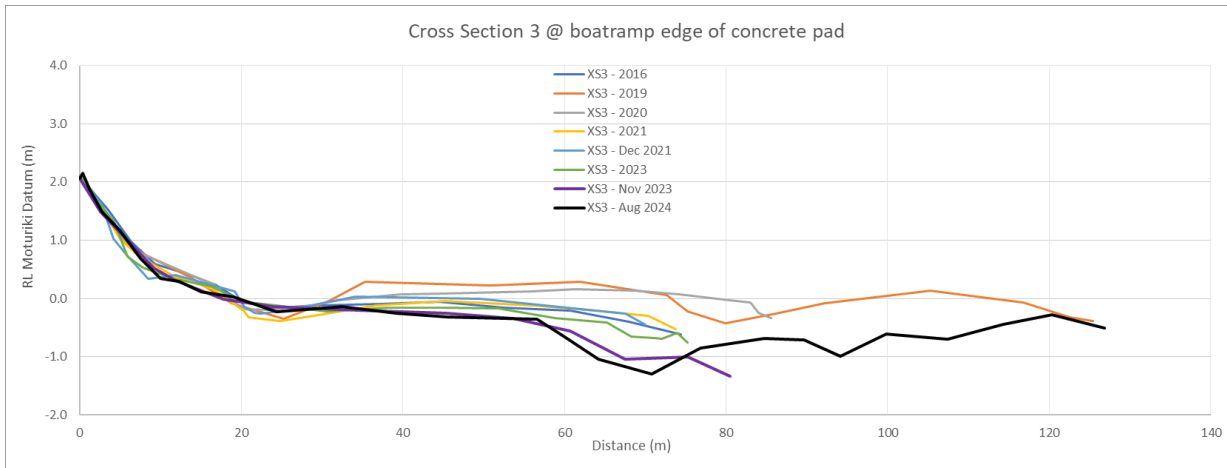
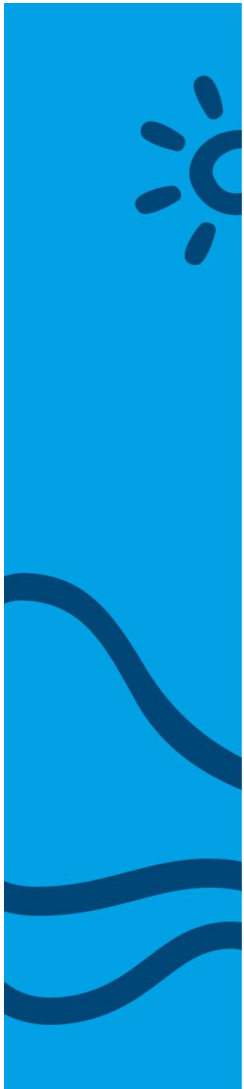


**Item 8.3, Presentation**



## Annual 'Land Survey' Monitoring (2016-2024) (Lower Maketu Estuary)

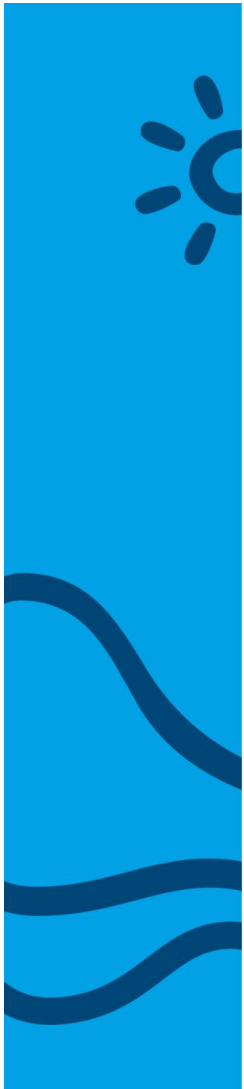




Item 8.3, Presentation



# Water quality and ecology

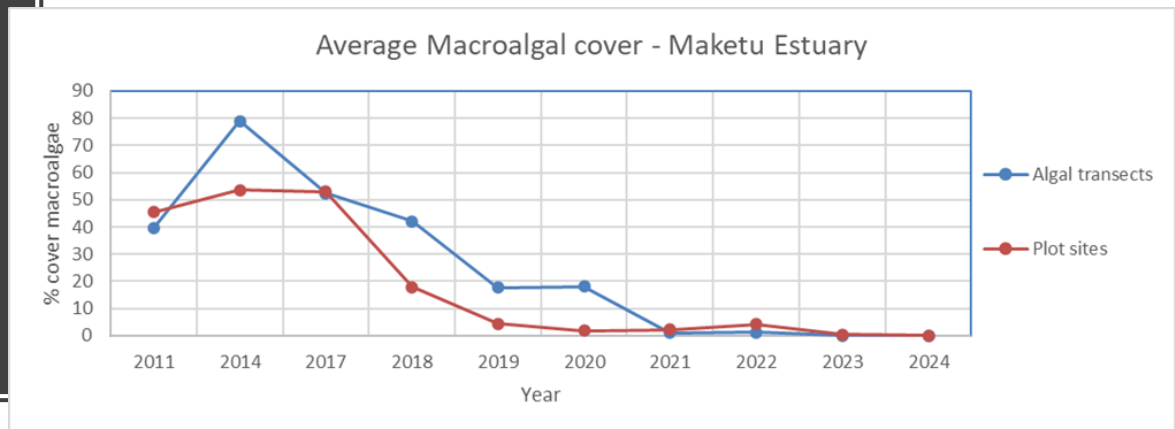
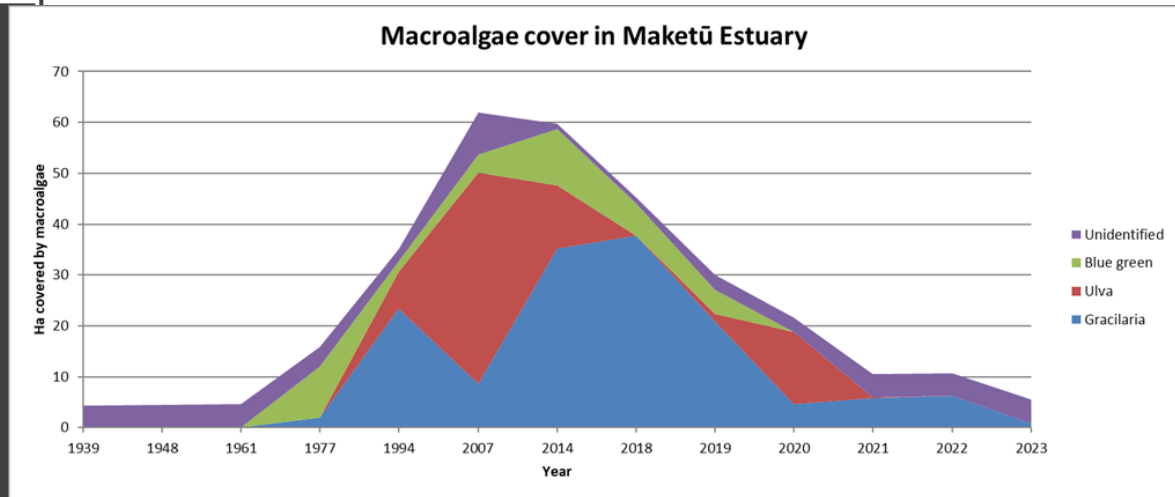


2014 aerial photograph of upper Maketū Estuary - Papahikahawai Creek



# Latest results - Algae cover

- Macroalgae has been mapped from 1939 – 2024
- Increase from 1939 to 2014
- Declines since 2017 (a good thing) due to tidal and river flushing



# Latest results - WQ & shellfish

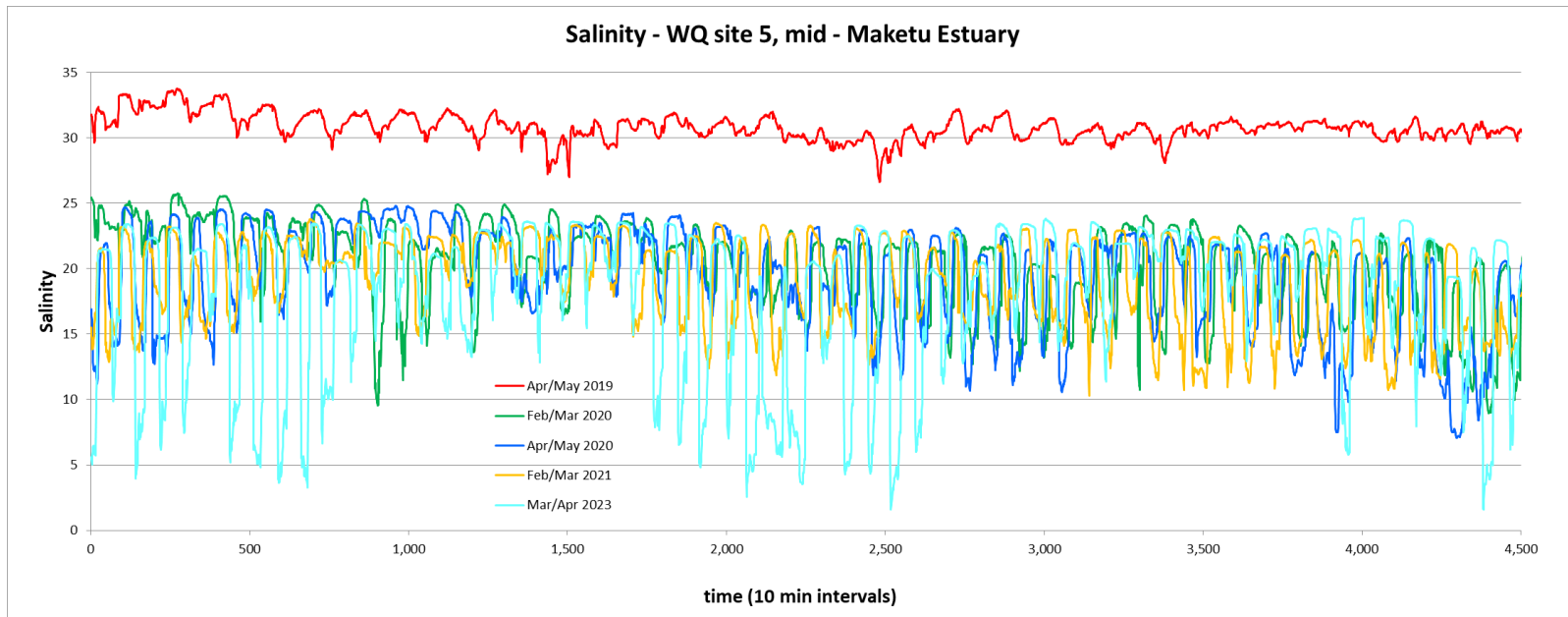
- Water and shellfish bacterial loads monitored in summer and winter.
- Nutrients concentrations monitored over whole tidal range in summer and low tide in winter.

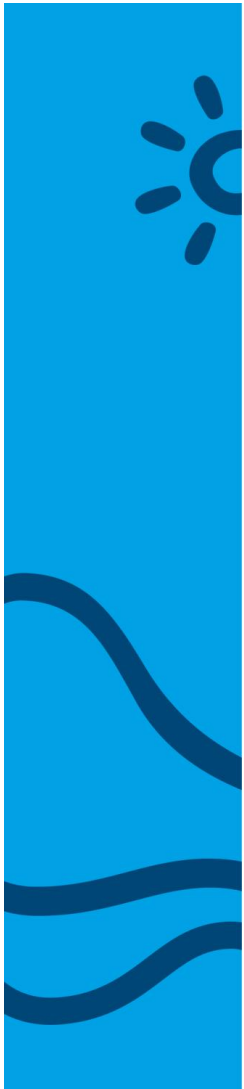




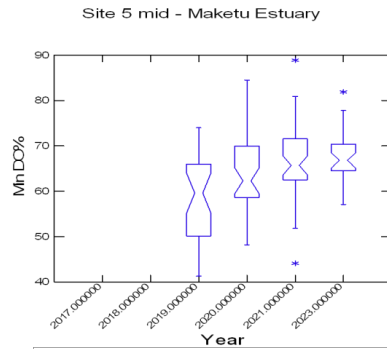
# Water column salinity

- Both Site 5 and Papahikahawai Creek show expected drop in salinity following the increased river diversion.
- 2023 results show lowest salinity in response to high river flows.

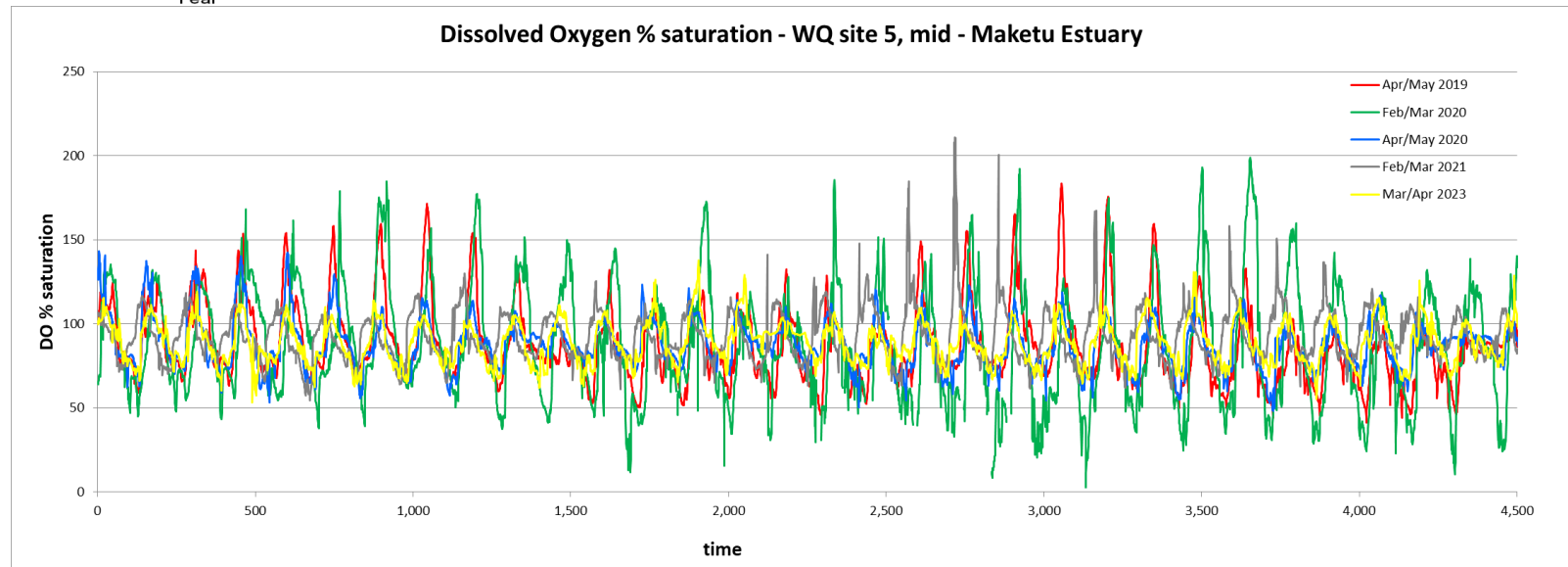




# Water column DO

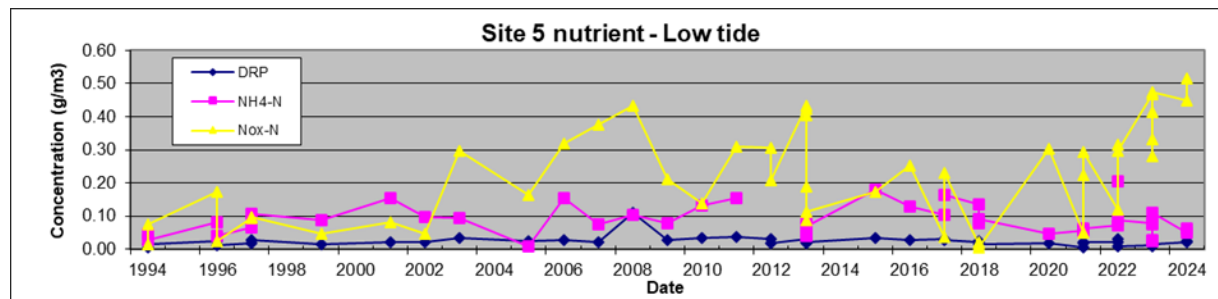
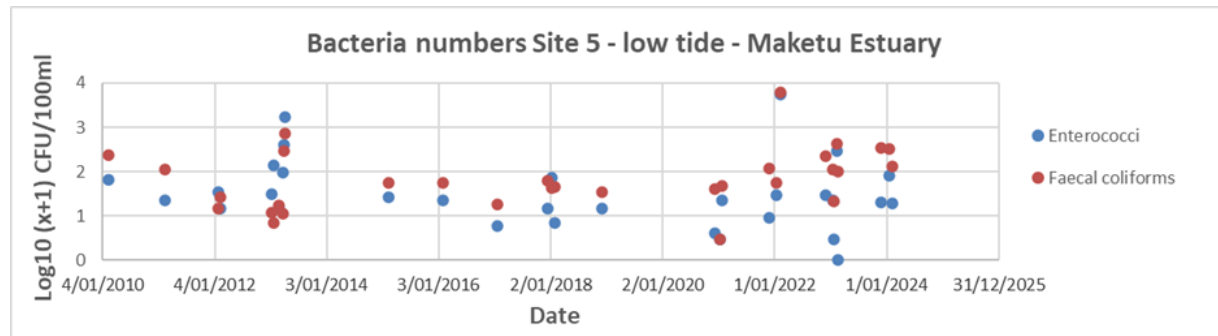


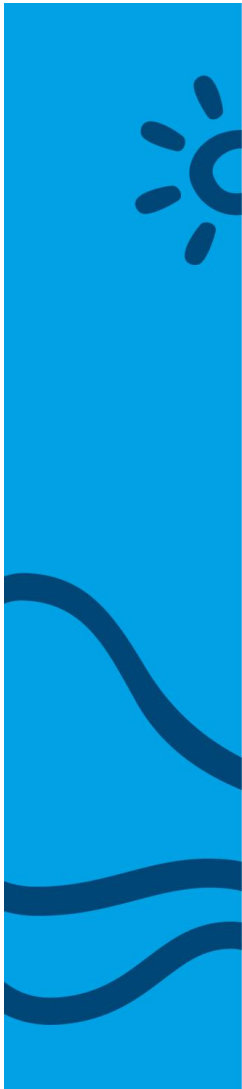
- Both Site 5 and Papahikahawai Creek show improving trend in dissolved oxygen (DO) levels.



# Nutrients and bacteria - water column

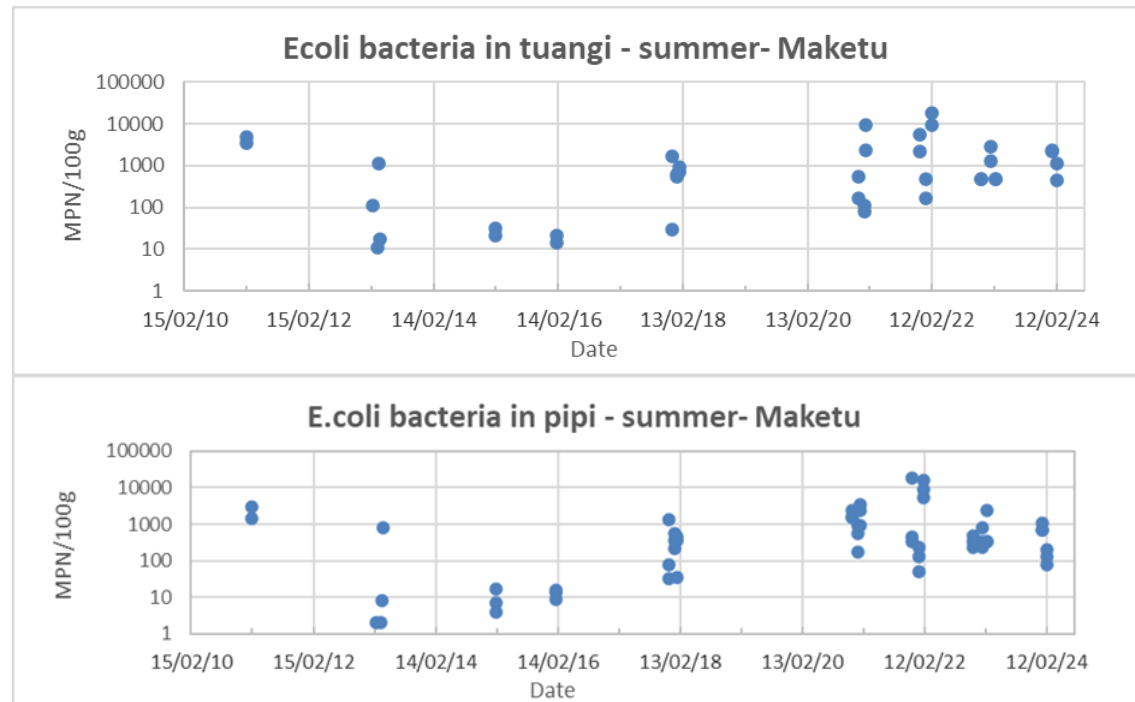
- Site 5 bacterial numbers increased 2022/23 due to rain but still within past levels.
- Nitrate results slightly higher in 2023, but overall, within levels pre the increased flow.





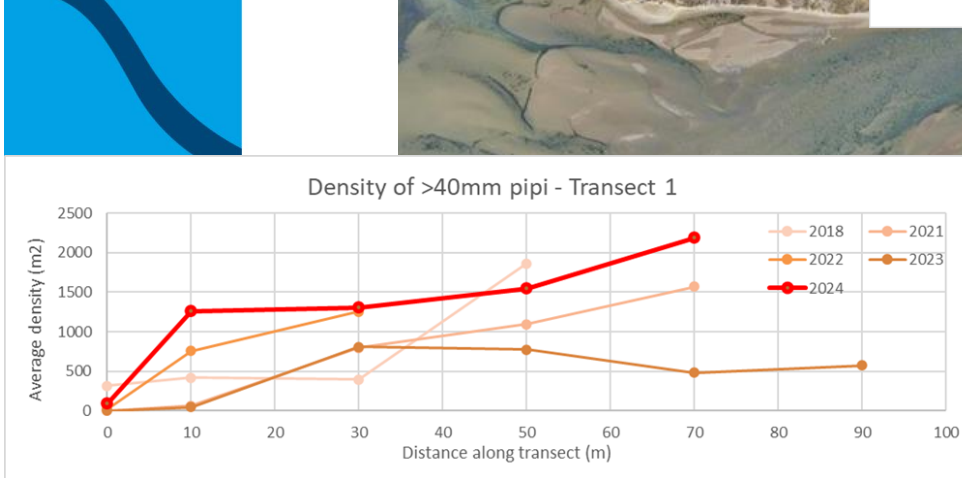
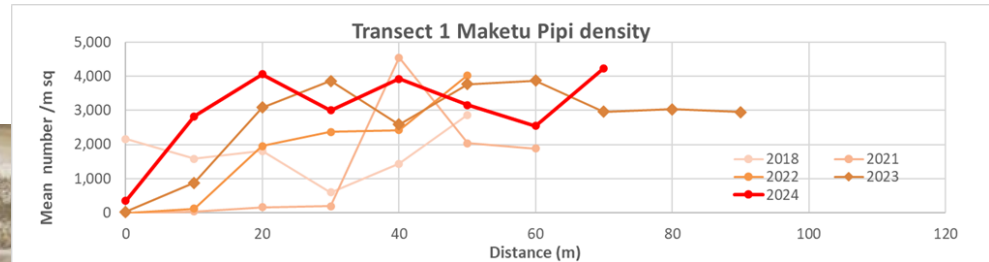
# Shellfish bacteria

- MPI food safety limit for E.coli now 230/100g median (5 rep) & sample max 700/100g.
- Lower rainfall in 2023/24 has reduced shellfish bacteria levels.



# 2024 pipi numbers and size

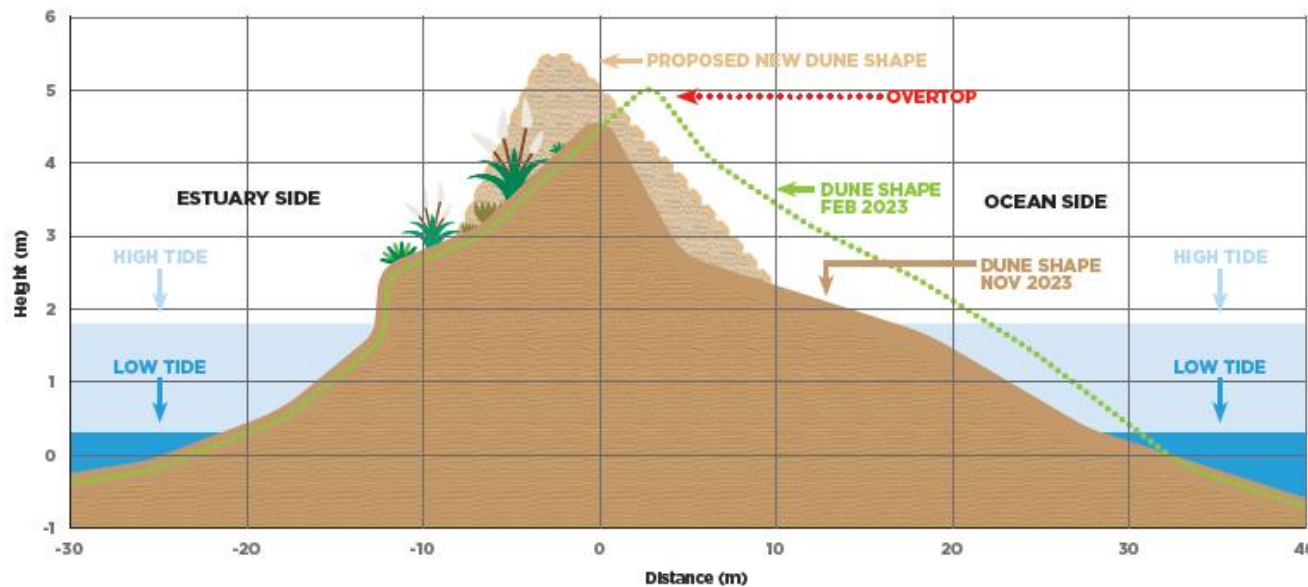
- Pipi monitoring (density and size) has shown improvements over the last few years







- Risk of wave overtopping from the ocean side
- La Nina conditions for past 3 years with another period of La Nina conditions expected summer 24/25
- Extreme events such as cyclone Gabrielle in 2023 caused measurable erosion, with a real risk of future storms overtopping causing a breach





- Proposed trial to close gates during large floods to reduce sediment while maintaining flushing benefits
- Suggestion to use 70m<sup>3</sup> flow rate at Te Matai as trigger for gate closures for two years
- Monitor - maximum five days in a row
- Thoughts?

percentiles	SS t/day	Cum total SS	% of total	% total above	% days above	Days above
0.1	3.4	3887	1.2%	98.8%	90.0	12381.3
0.2	5.2	10169	3.1%	96.9%	80.0	11005.6
0.3	5.9	17787	5.4%	94.6%	70.0	9629.9
0.4	6.6	26382	8.0%	92.0%	60.0	8254.2
0.5	7.8	36227	11.0%	89.0%	50.0	6878.5
0.6	11.6	49125	14.9%	85.1%	40.0	5502.8
0.7	13.9	66482	20.2%	79.8%	30.0	4127.1
0.8	21.0	89563	27.2%	72.8%	20.0	2751.4
0.85	25.2	105332	32.0%	68.0%	15.0	2063.6
0.9	35.9	126290	38.3%	61.7%	10.0	1375.7
0.91	38.8	131415	39.9%	60.1%	9.0	1238.1
0.92	43.9	137069	41.6%	58.4%	8.0	1100.6
0.93	51.1	143568	43.6%	56.4%	7.0	963.0
0.94	60.0	151206	45.9%	54.1%	6.0	825.4
0.95	73.4	160310	48.6%	51.4%	5.0	687.9
0.96	96.6	171879	52.2%	47.8%	4.0	550.3
0.97	122.2	186729	56.7%	43.3%	3.0	412.7
0.98	164.4	206017	62.5%	37.5%	2.0	275.1
<b>0.99</b>	<b>276.3</b>	<b>234368</b>	<b>71.1%</b>	<b>28.9%</b>	<b>1.0</b>	<b>137.6</b>
0.992	317.6	242533	73.6%	26.4%	0.8	110.1
0.993	347.4	247118	75.0%	25.0%	0.7	96.3
0.994	388.1	252166	76.5%	23.5%	0.6	82.5
<b>0.995</b>	<b>436.5</b>	<b>257801</b>	<b>78.2%</b>	<b>21.8%</b>	<b>0.5</b>	<b>68.8</b>
0.996	493.5	264170	80.2%	19.8%	0.4	55.0
0.997	610.8	271784	82.5%	17.5%	0.3	41.3
0.998	745.5	281016	85.3%	14.7%	0.2	27.5
0.999	1322.5	294627	89.4%	10.6%	0.1	13.8
1	7168.0	329564	100.0%	0.0%	0.0	0.0

**Bell Road - Former Waka Kotahi Land**

