

Estuary Health and Ecology



Natural Environment Regional Monitoring Network¹ (NERMN)

¹ The NERMN is our State of the Environment monitoring network.

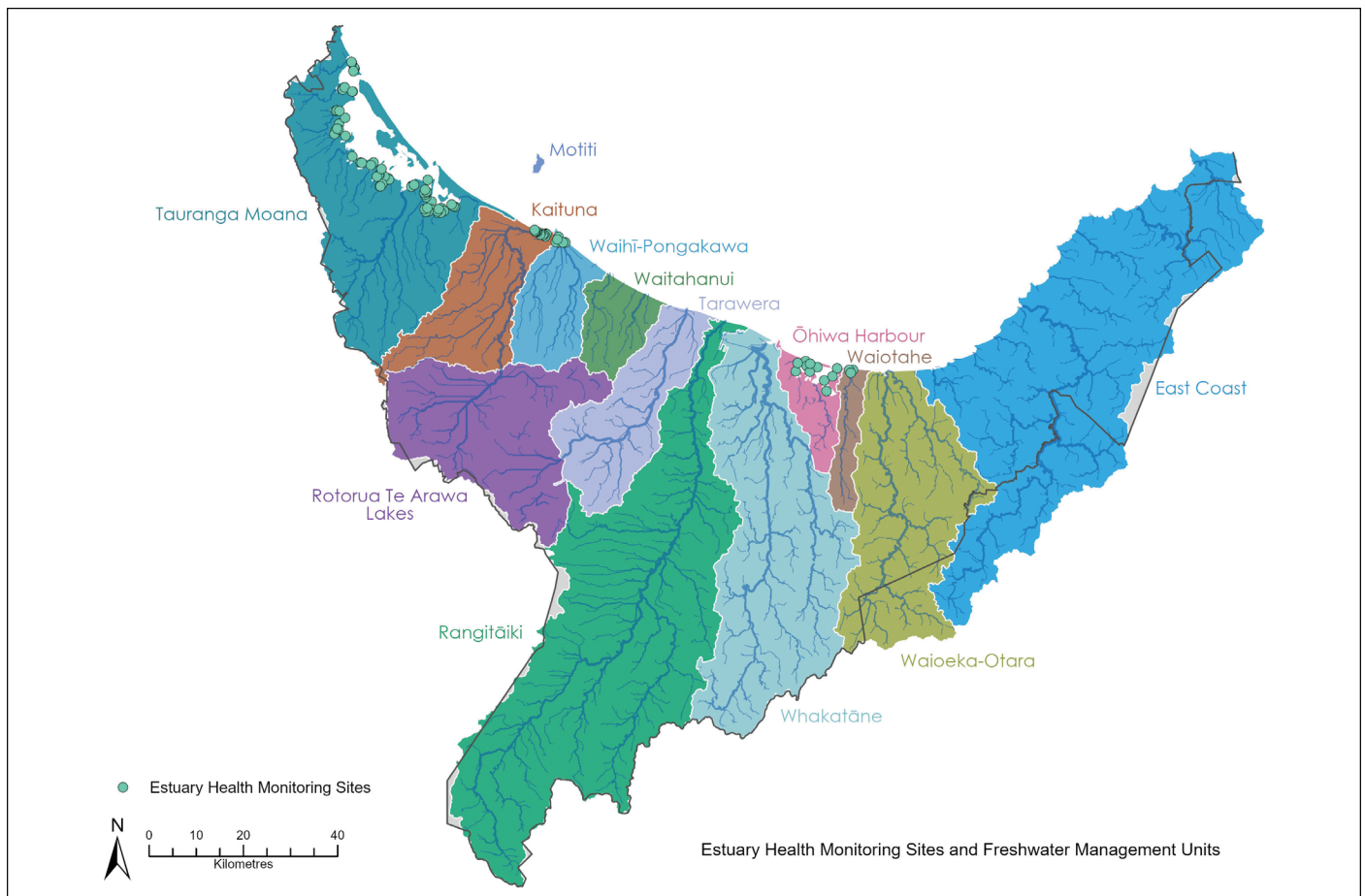


Figure 1: Location of NERMN estuary health & ecology sites in the Bay of Plenty. The grey line indicates the BOPRC boundary.

Description:

The Toi Moana Bay of Plenty Regional Council Estuary Health & Ecology Module was set up in 1993 to provide information on regional estuary state and trends. This was further expanded in 2014. Today, 100 estuary sites are monitored by the Regional Council.

The sites cover the main intertidal estuaries and harbours in the Bay of Plenty. The results from this monitoring is used to:

- report on the state of the environment for estuary health;
- compare measured estuary health attributes against available estuary health guidelines;
- detect estuary health trends and impacts; and
- identify specific estuary health issues.

This monitoring is part of Regional Council's function under s35 of the Resource Management Act 1991.

Purpose:

To provide scientifically defensible information on the important physical, chemical and biological characteristics of the natural resources of the Bay of Plenty region. This information is then used as a basis for the preparation of Regional Councils policies and plans, and the monitoring of their suitability and effectiveness.

Managed by Science and Data Services

Last reviewed July 2014 ([Click for link to report](#))

Where are the monitoring sites?

The location of all monitoring sites (as at August 2022) is shown in Figure 1. See Table 2 for a full site list.

What's involved in this monitoring?

1. Sites are selected by scientists and technical experts.
2. Sampling is carried out by qualified technicians.
3. Sample analysis is done by Hills Laboratories (chemical attributes), University of Waikato (sediment grain size), and by BOPRC estuary scientists (biological attributes).
4. Data is made publicly available on our [Environmental Data Portal](#) and [LAWA](#).
5. Data analysis and reporting is carried out by Regional Council scientists or external consultants. This information is also made publicly available on our [Environmental Data Portal](#) and [publications](#) section of the website.
6. Review of the monitoring programme is performed by Regional Council's Science Manager.

How often are they tested?

NERMN estuary health and ecology sites are monitored annually in summer.

What is tested?

A range of physical, chemical and biological attributes are monitored. These are detailed in the below table. Note, there may be some site-specific attributes. See next section for where to find the monitoring results. Additionally, we collect broadscale information on seagrass, mangrove and sea lettuce cover at regular intervals (~5 yearly).

Physical attributes	Chemical attributes (units)	Biological attributes
Sediment accumulation rate (mm/year)	Sediment total organic carbon (g/100g dry weight)	Macroinvertebrates (count)*
Sediment grain size (%)	Sediment total nitrogen (g/100g dry weight)	Epifauna (count)
Anoxic depth aRPD (mm)	Sediment total phosphorus (mg/kg dry weight)	Algae cover (%)
	Sediment heavy metals (mg/kg dry weight) (Arsenic, cadmium, chromium, copper, lead, nickel, mercury, zinc)	
	Polycyclic aromatic hydrocarbons (mg/kg dry weight)*	

Table 1: Attributes analysed for the NERMN Estuary Health & Ecology module. * = indicates at a selection of sites only.

Where can I locate the monitoring results?

Results are reported in a range of different ways, reflecting the diverse requirements of end users (see Figure 2). You can check out our real-time data [here](#) or more extensive state of environment reports and snapshots [here](#).

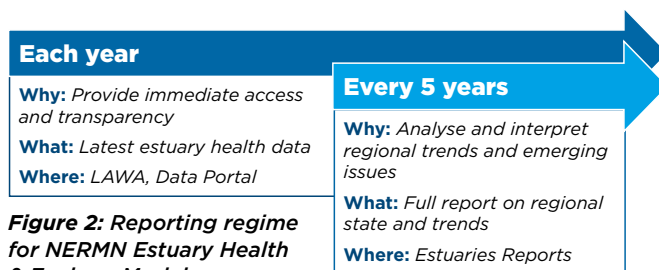


Figure 2: Reporting regime for NERMN Estuary Health & Ecology Module

Table 2: Full site list as of August 2022. All sites are monitored annually for the attributes in Table 1 (*exception Mak 3 has no sediment accumulation rate). Additional monitoring attributes of macrofauna and polycyclic aromatic hydrocarbons (PAHs) are noted in the table.

Site number	Site name	Estuary	Easting	Northing	Freshwater Management Unit	Macrofauna	PAH
EP424123	Tauranga Harbour at Plate 1	Rangataua Bay	1884242	5821235	Tauranga Moana	No	No
EP393140	Tauranga Harbour at Plate 2	Rangataua Bay	1883931	5821400	Tauranga Moana	No	No
EP350173	Tauranga Harbour at Plate 3	Rangataua Bay	1883506	5821739	Tauranga Moana	No	No
EP167049	Tauranga Harbour at Plate 4	Welcome Bay	1881672	5820490	Tauranga Moana	No	No
EP188041	Tauranga Harbour at Plate 5	Welcome Bay	1881886	5820412	Tauranga Moana	No	Yes
EP123006	Tauranga Harbour at Plate 6	Welcome Bay	1881239	5820062	Tauranga Moana	No	No
EO065999	Tauranga Harbour at Plate 7	Welcome Bay	1880652	5819988	Tauranga Moana	No	No
EP057032	Tauranga Harbour at Plate 8	Welcome Bay	1880571	5820329	Tauranga Moana	No	Yes
EP080073	Tauranga Harbour at Plate 9	Welcome Bay	1880808	5820738	Tauranga Moana	No	No
EP076075	Tauranga Harbour at Plate 10	Welcome Bay	1880768	5820756	Tauranga Moana	No	No
DP863029	Tauranga Harbour at Plate 11	Waimapu	1878635	5820296	Tauranga Moana	No	No
DP807024	Tauranga Harbour at Plate 12	Waimapu	1878074	5820244	Tauranga Moana	No	No
DP785074	Tauranga Harbour at Plate 13	Waimapu	1877856	5820740	Tauranga Moana	No	No
DP834104	Tauranga Harbour at Plate 14	Waimapu	1878341	5821044	Tauranga Moana	No	No
DP813338	Tauranga Harbour at Plate 15	Waikareao	1878137	5823383	Tauranga Moana	No	Yes

Site number	Site name	Estuary	Easting	Northing	Freshwater Management Unit	Macrofauna	PAH
DP805391	Tauranga Harbour at Plate 16	Waikareao	1878054	5823913	Tauranga Moana	No	No
DP786385	Tauranga Harbour at Plate 17	Waikareao	1877860	5823857	Tauranga Moana	No	No
DP779421	Tauranga Harbour at Plate 18	Waikareao	1877791	5824213	Tauranga Moana	No	Yes
DP775421	Tauranga Harbour at Plate 19	Waikareao	1877750	5824216	Tauranga Moana	No	No
DP821444	Tauranga Harbour at Plate 20	Waikareao	1878215	5824448	Tauranga Moana	No	No
DP791484	Tauranga Harbour at Plate 21	Waikareao	1877916	5824840	Tauranga Moana	No	No
DP504569	Tauranga Harbour at Plate 22	Matua	1875046	5825697	Tauranga Moana	No	Yes
DP496555	Tauranga Harbour at Plate 23	Matua	1874961	5825553	Tauranga Moana	No	Yes
DP556593	Tauranga Harbour at Plate 24	Matua	1875561	5825937	Tauranga Moana	No	No
CP998708	Tauranga Harbour at Plate 25	Waikaraka	1869982	5827082	Tauranga Moana	No	No
DP007729	Tauranga Harbour at Plate 26	Waikaraka	1870072	5827297	Tauranga Moana	No	No
DP018706	Tauranga Harbour at Plate 27	Waikaraka	1870183	5827068	Tauranga Moana	No	No
DP027705	Tauranga Harbour at Plate 28	Waikaraka	1870273	5827050	Tauranga Moana	No	No
CP856728	Tauranga Harbour at Plate 29	Te Puna	1868601	5827266	Tauranga Moana	Yes	Yes
CP880730	Tauranga Harbour at Plate 30	Te Puna	1868802	5827303	Tauranga Moana	No	No
CP925769	Tauranga Harbour at Plate 31	Te Puna	1869251	5827693	Tauranga Moana	No	No
CP882607	Tauranga Harbour at Plate 32	Te Puna	1868821	5826072	Tauranga Moana	No	No
CP828557	Tauranga Harbour at Plate 33	Te Puna	1868286	5825573	Tauranga Moana	No	No
CP840561	Tauranga Harbour at Plate 34	Te Puna	1868407	5825618	Tauranga Moana	No	No
CP824813	Tauranga Harbour at Plate 35	Mangawhai	1868241	5828130	Tauranga Moana	No	No
CP810794	Tauranga Harbour at Plate 36	Mangawhai	1868109	5827940	Tauranga Moana	No	No
CP768766	Tauranga Harbour at Plate 37	Mangawhai	1867686	5827666	Tauranga Moana	No	No
CP865931	Tauranga Harbour at Plate 38	Ōmokoroa	1868651	5829310	Tauranga Moana	No	No
CQ695064	Tauranga Harbour at Plate 39	Waipapa	1866956	5830640	Tauranga Moana	No	Yes
CQ635011	Tauranga Harbour at Plate 40	Waipapa	1866357	5830113	Tauranga Moana	No	No
CQ424067	Tauranga Harbour at Plate 41	Apata	1864245	5830677	Tauranga Moana	No	Yes
CQ446055	Tauranga Harbour at Plate 42	Apata	1864469	5830553	Tauranga Moana	No	No
CQ241196	Tauranga Harbour at Plate 44	Wainui	1862416	5831965	Tauranga Moana	No	No
CQ099630	Tauranga Harbour at Plate 45	Matahui	1860998	5836300	Tauranga Moana	No	No
BQ888742	Tauranga Harbour at Plate 46	Rereatukahia	1858880	5837422	Tauranga Moana	No	No
BQ921731	Tauranga Harbour at Plate 47	Rereatukahia	1859212	5837312	Tauranga Moana	No	No
BQ964886	Tauranga Harbour at Plate 48	Rereatukahia	1859646	5838863	Tauranga Moana	No	No

Site number	Site name	Estuary	Easting	Northing	Freshwater Management Unit	Macrofauna	PAH
CR095017	Tauranga Harbour at Plate 49	Katikati	1860953	5840102	Tauranga Moana	Yes	No
BR890160	Tauranga Harbour at Plate 50	Uretara	1858903	5841602	Tauranga Moana	No	Yes
BR916166	Tauranga Harbour at Plate 51	Uretara	1859161	5841666	Tauranga Moana	No	No
BR974164	Tauranga Harbour at Plate 52	Uretara	1859746	5841640	Tauranga Moana	No	No
CR252571	Tauranga Harbour at Plate 53	Ongare	1862527	5845714	Tauranga Moana	No	No
CR028621	Tauranga Harbour at Plate 54	Tuapiro	1860285	5846213	Tauranga Moana	No	No
CR045612	Tauranga Harbour at Plate 55	Tuapiro	1860458	5846124	Tauranga Moana	No	No
CR085659	Tauranga Harbour at Plate 56	Tuapiro	1860851	5846591	Tauranga Moana	No	No
CS284079	Tauranga Harbour at Plate 57	Waiau	1862847	5850792	Tauranga Moana	No	No
CS239185	Tauranga Harbour at Plate 58	Waiau	1862398	5851854	Tauranga Moana	No	No
CS230198	Tauranga Harbour at Plate 59	Waiau	1862303	5851980	Tauranga Moana	No	No
CS272004	Tauranga Harbour at Plate 60	Bowentown	1862727	5850040	Tauranga Moana	No	No
CS292058	Tauranga Harbour at Plate 61	Poi's	1862905	5850500	Tauranga Moana	Yes	Yes
DP847700	Tauranga Harbour at Plate 62	Otumoetai	1878590	5826550	Tauranga Moana	Yes	Yes
DP937253	Tauranga Harbour at Plate 63	Grace Rd	1879380	5822540	Tauranga Moana	Yes	Yes
DP908079	Tauranga Harbour at Plate 64	Waimapu	1879080	5820750	Tauranga Moana	Yes	Yes
EP139102	Tauranga Harbour at Plate 65	Welcome Bay	1881385	5821000	Tauranga Moana	Yes	Yes
CR245567	Tauranga Harbour at Plate 66	Ongare	1862450	5845670	Tauranga Moana	No	No
BQ864672	Tauranga Harbour at Plate 67	Rereatukahia	1858640	5836725	Tauranga Moana	No	No
BQ958767	Tauranga Harbour at Plate 68	Rereatukahia	1859588	5837671	Tauranga Moana	No	No
BQ922786	Tauranga Harbour at Plate 69	Rereatukahia	1859223	5837860	Tauranga Moana	No	No
GO358551	Maketū Estuary at Plate 1	Maketū Estuary	1903580	5815515	Kaituna	Yes	No
GO337499	Maketū Estuary at Plate 2	Maketū Estuary	1903377	5814991	Kaituna	Yes	No
GO316537	Maketū Estuary at Plate 3	Maketū Estuary	1903167	5815377	Kaituna	Yes	No
GO294528	Maketū Estuary at Plate 4	Maketū Estuary	1902940	5815287	Kaituna	Yes	No
GO244563	Maketū Estuary at Plate 5	Maketū Estuary	1902444	5815633	Kaituna	Yes	No
GO237535	Maketū Estuary at Plate 6	Maketū Estuary	1902375	5815351	Kaituna	Yes	No
GO172583	Maketū Estuary at Plate 7	Maketū Estuary	1901726	5815839	Kaituna	Yes	No
GO152602	Maketū Estuary at Plate 8	Maketū Estuary	1901520	5816020	Kaituna	Yes	No
GO131596	Maketū Estuary at Plate 9	Maketū Estuary	1901319	5815967	Kaituna	No	No
GO121606	Maketū Estuary at Plate 10	Maketū Estuary	1901217	5816066	Kaituna	No	No
GO113636	Maketū Estuary at Plate 11	Maketū Estuary	1901134	5816366	Kaituna	No	No

Site number	Site name	Estuary	Easting	Northing	Freshwater Management Unit	Macrofauna	PAH
GO375543	Mak 3*	Maketū Estuary	1903753	5815476	Kaituna	Yes	No
GO619492	Waihi Estuary at Plate 1	Waihi Estuary	1906190	5814927	Waihi-Pongakawa	Yes	No
GO620366	Waihi Estuary at Plate 2	Waihi Estuary	1906200	5813660	Waihi-Pongakawa	No	No
GO766366	Waihi Estuary at Plate 3	Waihi Estuary	1907660	5813660	Waihi-Pongakawa	Yes	No
GO566378	Waihi Estuary at Plate 4	Waihi Estuary	1905660	5813780	Waihi-Pongakawa	No	No
GO720366	Waihi Estuary at Plate 5	Waihi Estuary	1907200	5813660	Waihi-Pongakawa	Yes	No
GO600430	Waihi Estuary at Plate 6	Waihi Estuary	1906000	5814300	Waihi-Pongakawa	Yes	No
ML870670	Waiōtahe Estuary at Plate 2	Waiōtahe Estuary	1968700	5786700	Waiōtahe	No	No
ML790670	Waiōtahe Estuary at Plate 3	Waiōtahe Estuary	1967900	5786700	Waiōtahe	No	No
ML820600	Waiōtahe Estuary at Plate 4	Waiōtahe Estuary	1968200	5786000	Waiōtahe	No	No
ML308216	Ōhiwa Harbour at Plate 1 Kutarere	Ōhiwa Harbour	1963082	5782161	Ōhiwa Harbour	No	Yes
ML535702	Ōhiwa Harbour at Plate 2 Ōhiwa camp	Ōhiwa Harbour	1965356	5787028	Ōhiwa Harbour	No	No
LL867848	Ōhiwa Harbour at Plate 3 water ways	Ōhiwa Harbour	1958667	5788485	Ōhiwa Harbour	No	No
LL959795	Ōhiwa Harbour at Plate 4 North	Ōhiwa Harbour	1959589	5787961	Ōhiwa Harbour	No	Yes
LL697814	Ōhiwa Harbour at Plate 5 Oyster farm	Ōhiwa Harbour	1956983	5788151	Ōhiwa Harbour	No	Yes
LL659633	Ōhiwa Harbour at Plate 6 West	Ōhiwa Harbour	1956592	5786329	Ōhiwa Harbour	No	No
ML437530	Ōhiwa Harbour at Plate 7 East	Ōhiwa Harbour	1964364	5785310	Ōhiwa Harbour	No	No
LL891749	Ōhiwa Harbour at Plate 8	Ōhiwa Harbour	1959035	5787401	Ōhiwa Harbour	Yes	No
LL951629	Ōhiwa Harbour at Plate 9	Ōhiwa Harbour	1959574	5786357	Ōhiwa Harbour	Yes	No
ML111719	Ōhiwa Harbour at Plate 10	Ōhiwa Harbour	1960754	5786649	Ōhiwa Harbour	Yes	No
ML262439	Ōhiwa Harbour at Plate 11	Ōhiwa Harbour	1962718	5784314	Ōhiwa Harbour	Yes	No