

MANAWATŪ CATCHMENT

STATE OF ENVIRONMENT SUMMARY 2020-21

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THE OVERVIEW

The Manawatū catchment includes the Manawatū, Ōroua, Pōhanginga, Tiraumea, Mangatainoka and Mangahao Rivers, along with a number of upland and coastal lakes.

The main issues for water quality are:

- High nutrient concentrations (e.g. nitrogen and phosphorous);
- Poor clarity and high sediment;
- Impacts on life in the streams and rivers;
- High bacteria counts.

High levels of nitrogen and phosphorus can increase algal growth. Whilst naturally occurring, these can become elevated as a result of piped discharges or from the way we use land. A large number of sites in the Manawatū Catchment do not meet the targets set by Council (Regional targets). Nitrogen appears to be improving (less in the water) over the last 10-years, whereas phosphorus is largely getting worse (increasing). A measure of algal growth (chlorophyll a) is also getting worse (increasing) over this period.

Water clarity is a measure of how far the eye can see through water. Poor water clarity is usually an indication that the water is unsafe for swimming, unsuitable for stock to drink, and harmful to plant, insect and fish life. Regional targets for clarity are not met within the catchment, with more than half of all sites also below national bottom lines. Over the last 10 years this appears to be generally getting worse.

E. coli is a type of bacteria found in the guts of warm-blooded animals. High concentrations can indicate faecal contamination, which can be harmful to humans and affect the suitability for swimming. The targets for *E. coli* are not met within the catchment; and most sites also fall below the national bottom line. In the Manawatū Catchment, changes to the way piped discharges are treated and the removal of dairy effluent discharges means the faecal contamination is usually associated with rainfall events (either overland or in an urban context via stormwater). Over the 10 year period *E. coli* is generally getting worse (increasing), whereas for sites with a longer record, over a 20 year period *E. coli* is generally improving.

Within the Manawatū catchment there are 7 species of rare and threatened fish that have been observed. Another measure of water health is the Macroinvertebrate Community Index (MCI). The MCI is based on the number and type of macroinvertebrates (aquatic animals such as insects, worms and snails) found at a site, which can tell us a lot about the state of a water body. Compliance with Regional targets is mixed across the catchment. The MCI is mostly good or fair when compared to national targets. No site in the Manawatū catchment is below national bottom line. Ten year trends in MCI are largely getting worse (decreasing). Whereas 20 year trends are generally improving (increasing). There is insufficient data to make statements on native fish trends.

Groundwater quality within the region varies according to both depth and location. Generally, deeper groundwater is of higher quality while shallow groundwater in the Upper Manawatū and Mangatainoka catchments is more susceptible to elevated nitrogen levels. These differences come about through complex processes that occur underground due partially to the local geology leading to some areas being better at naturally reducing nitrogen.

Water quality information is readily available on the LAWA website which also includes a number of fact sheets around the different measures and statistics used, find more information at www.lawa.org.nz

GROUNDWATER QUALITY

Groundwater quality is monitored at 22 bores in the Manawatū catchment on a quarterly basis. Nitrate is a common, naturally occurring compound. However, in high concentrations it can affect drinking water (over 11.3 mg/L). The average nitrate concentration in bores monitored in the Manawatū catchment is 6.16 g/m³-N, with a median of 3.50 g/m³-N.

22

BORES MONITORED QUARTERLY FOR GROUNDWATER QUALITY

84

BORES SURVEYED MONTHLY FOR GROUNDWATER LEVEL

14% OF SITES SHOW DECLINING WATER LEVELS

30% OF SITES SHOW INCREASING WATER LEVELS

LAKES

LAKES OVER 1 HECTARE IN SIZE: 71

Lakes and their associated wetlands are some of our most treasured freshwater systems. They provide a range of ecological, cultural and spiritual values and are often popular areas for water sports, fishing and hunting, and gathering kai.

1

LAKE MONITORED FOR WATER QUALITY

22

RIVERINE/ OXBOW LAKES

11

DUNE LAKES

38

RESERVOIRS

9

LAKES SURVEYED FOR ECOLOGICAL HEALTH USING LAKESPI

3

EXCELLENT HEALTH

4

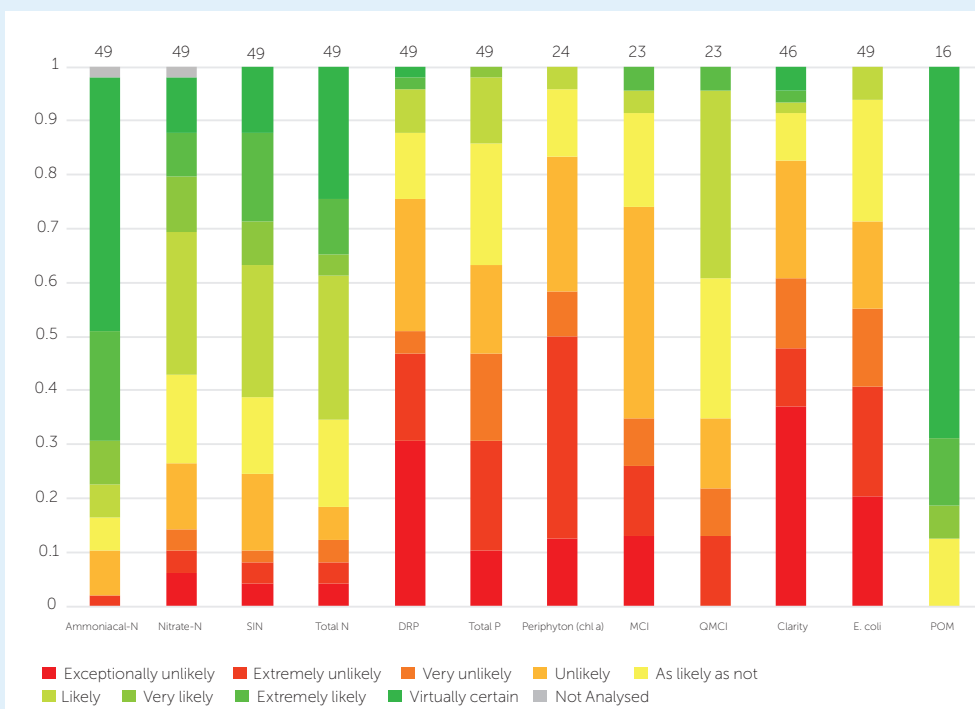
MODERATE HIGH HEALTH

2

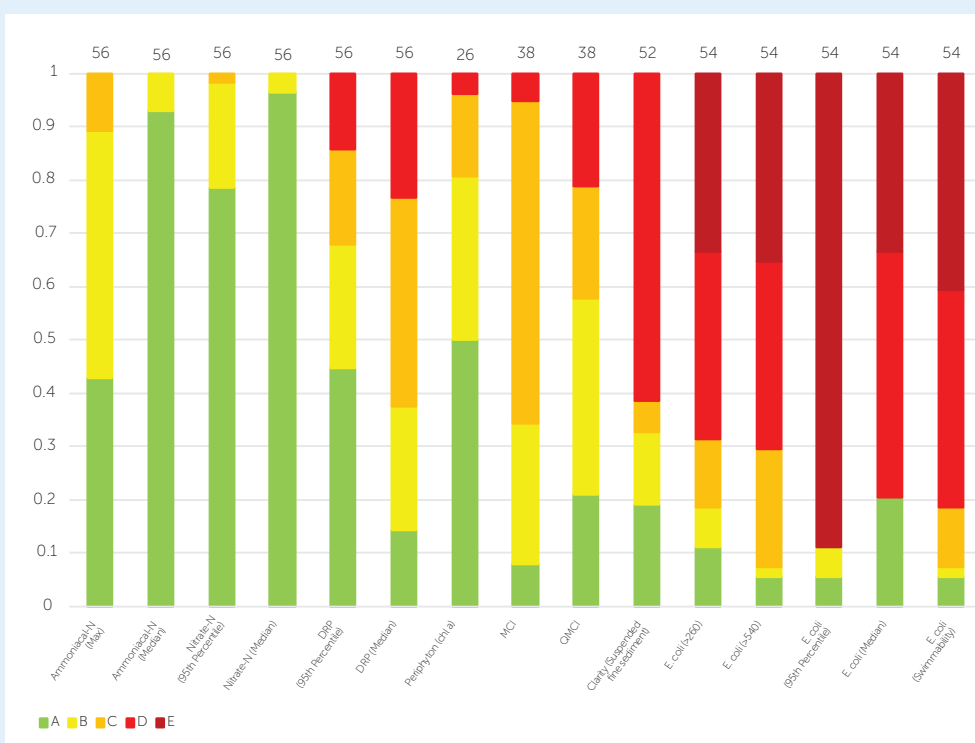
NON-VEGETATED OR POOR HEALTH

RIVER WATER QUALITY

PROPORTION OF SITES SHOWING A LIKELIHOOD OF AN IMPROVING TREND FOR THE 10 YEAR PERIOD ENDING DECEMBER 2019



STATE COMPARED TO NOF TARGETS (5 YEARS TO DECEMBER 2019)



ESTUARIES AND COAST

TOTAL NUMBER OF ESTUARIES: 1

Our coast and estuaries provide important habitat for a diverse range of life including plants, birds and fish. There are also great places for recreational activities such as swimming, kayaking, fishing or bird watching.

VULNERABILITY TO NUTRIENTS

LOW-MODERATE 1

MODERATE 0

MODERATE-HIGH 0

VULNERABILITY TO SEDIMENTS

LOW-MODERATE 1

MODERATE 0

MODERATE-HIGH 0

The Manawatū Estuary is the only estuary located within the catchment, and is the largest estuary and wader bird feeding ground in the lower North Island, with the most diverse range of birds to be seen in any one place in New Zealand. The Manawatū Estuary is a wetland of regional and international importance, a taonga made up of 250 hectares of dunes, mudflats and salt marshes. It provides habitat and migratory pathways for rare birds and native fish. The estuary supports 23 threatened species of birds, fish and plants.

FISH

The Manawatū catchment is home to numerous aquatic species including fish, insects, kākahi, worms and snails. The Whio (blue duck) is also present in areas of the catchment. Whio are a taonga (treasured) species for many Māori, with strong cultural, spiritual and historic connections. There are 19 native freshwater fish species within the wider Horizons Region; many of these will naturally be present in the Manawatū.

Below are nationally rare and threatened fish species found in the Manawatū catchment and their national conservation status. Whilst not nationally threatened, there are some species in the Manawatū Catchment, such as the banded kōkopu, that are rare, threatened or at risk in the Horizons Region.

KŌARO
DECLINING

BANDED KŌKOPU
NOT THREATENED

DWARF GALAXIAS
DECLINING

LAMPREY
NATIONALLY VULNERABLE

SHORT JAW KŌKOPU
NATIONALLY VULNERABLE

BROWN MUDFISH
DECLINING

REDFIN BULLY
DECLINING

Introduced fish such as trout are popular for recreation. Many areas within the Manawatū catchment are recognised as regionally significant trout fisheries or as trout spawning habitat.

CLIMATE

Mean annual rainfall ranges from less than 900mm near the coast to over 2,000mm in the ranges.

Potential climate impact: Currently, spring and winter rainfall is expected to increase to the west of the ranges by 2040, with less rainfall in autumn and summer. Summer flows in the Manawatū River are projected to decrease by 14% by 2090, but the average number of high flow or flood events we experience each year is likely to increase.

SWIM SPOTS

Long-term grades for swimmability are calculated for all sites monitored for recreation during summer. These are based on 3 years' worth of data. The most recent bacteria grades show 24 sites have poor quality for swimming, one site is fair and two sites are good. Sites may be safe to swim some (or even much) of the time, but are not consistently so throughout the bathing season.

For more information about swim spots in the Manawatū refer to www.LAWA.org.nz

TOTAL STREAM LENGTH IN THE CATCHMENT:
9,724 km

TOTAL STREAM LENGTH FOR LARGE RIVERS (> ORDER 4):
1,408 km

OVERALL SWIMMABILITY AT MONITORED SITES FOR THE 2019-20 SEASON:

52%

RIVERS AND STREAMS

100%

COASTAL SITES

62%

LAKES

LAND

CATCHMENT AREA:
589,900 ha

HIGHLY ERODIBLE LAND:
36,282 ha

6% OF THE CATCHMENT

VERSATILE SOILS:
114,575 ha

19% OF THE CATCHMENT

LAND USE:
49% Sheep and/or beef
14% Native forest
17% Dairy farming
3% Forestry
15% Other

BIODIVERSITY

KNOWN WETLANDS:
1,241 ha

81 SITES

KNOWN BUSH REMNANTS:
16,514 ha

390 SITES

WATER QUANTITY

2

GROUND WATER MANAGEMENT ZONES

TARARUA 1% ALLOCATED

MANAWATU 47% ALLOCATED

1 COMMERCIAL HYDROELECTRICITY SCHEME

13 WATER MANAGEMENT ZONES AND 49 SUB ZONES, OF WHICH:

35 HAVE WATER AVAILABLE

10 ARE WITHIN 95 - 100% OF TOTAL ALLOCATION

4 OVER-ALLOCATED

WATER USE

EXCLUDING HYDROELECTRICITY

CONSENTED WATER USE:

71% AGRICULTURE AND HORTICULTURE

20% MUNICIPAL

9% INDUSTRY/OTHER

CURRENT INTERVENTIONS

Many actions are already underway to improve the health of Manawatū Awa. These include:

- Manawatū River Leader's Forum - a collaborative body that brings hapū and iwi, local government, farming and industry leaders together with academics and environmental and recreational groups
- Freshwater Improvement Fund - A 2023 goal to fence, plant, remove barriers to fish passage. Support community projects, upgrade wastewater treatment plants, support development of iwi management plans and increase community engagement
- Tu Te Manawa - Tū Te Manawa is a kaupapa funded by the Ministry for the Environment's Te Mana o te Wai fund that has resulted in the construction of eight whare, or educational kiosks.
- Regulatory Interventions - through the implementation of Horizons' One Plan policies and rules, along with other national legislation such as Acts, national standards and policy statements.
- Environmental Education - increasing knowledge and awareness of the environment and some of its associated challenges. There are 38 Enviroschools in the Manawatū catchment, an action-based programme where young people are empowered to design and lead sustainability projects in their schools, neighbourhoods and country.
- Hill-country erosion control (SLUI) - In the Manawatū catchment, SLUI has so far resulted in:
 - o 259 Whole Farm Plans, covering 137,301 hectares (62.5% of top/high priority land);
 - o 6,286 hectares of erosion mitigation works;
 - o 2,257,934 trees planted; and
 - o 352.2 km of fencing.
- Riparian management and habitat restoration - Local communities and land owners, with support from Horizons, have erected 685 km of riparian fencing in the Manawatū catchment, and planted over 400,000 plants along stream banks.

For more information check out the State of Environment 2019 report at www.horizons.govt.nz

Learn more about the state of our climate, air, land and water online at www.horizons.govt.nz