HAWKE'S BAY
REGIONAL COUNCIL

Outstanding Water Bodies Plan Change

Candidate List of Outstanding Water Bodies in Hawke's Bay – Secondary Assessments for:

Heretaunga Aquifer, Karamu Stream, Lake Whakakī , Lake Whatumā, Lake Waikaremoana, Lake Tūtira (including Aropaoanui River + Papakiri Stream), Lake Waikareiti, Lower Ngaruroro River (below Whanawhana), Mangahauanga Stream, Makirikiri River, Porangahau River, Ruakituri River, Ruataniwha Aquifer, Taruarau River , Te Whanganui a Orotū (Ahuriri Estuary), Tukituki River, Tutaekuri River, Upper Mohaka River, Upper Ngaruroro River (above Whanawhana), Waipawa River, Waipunga River, Wairoa River.

June 2018
HBRC Report Number: RM19-252
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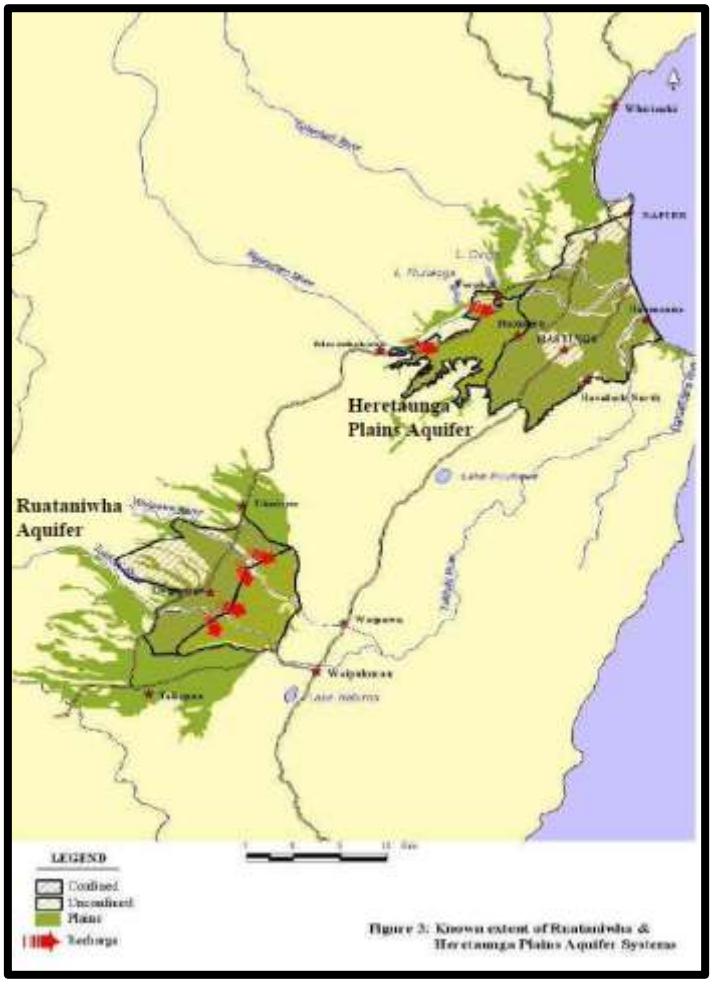
Heretaunga Aquifer



Key Values
Cultural
Ecology
Natural characteristics

Table 1: List of documents reviewed

Year	Name	Author
1997	Heretaunga Plains Groundwater Study	HBRC, Crown Research Institute, NIWA, Landcare Research New Zealand
2003	Hastings District Plan (Section 12.1 – Heretaunga Plains Unconfined Aquifer Resource Management Unit)	Hastings District Council
2006	Updating Evidence of Ngahiwi Tomoana on behalf of Ngāti Kahungunu Iwi Incorporated for Wai 262 Claim	Ngahiwi Tomoana (Ngāti Kahungunu Iwi Incorporated)
2009	A Review of Current Groundwater Management in Hawke's Bay and Recommendations for Protection of Groundwater Ecosystems	NIWA
2012	Comments from Ngāti Kahungunu Iwi Incorporated on HBRC's Draft Change 5	Ngāti Kahungunu Iwi Incorporated
2012	Submission from Ngāti Kahungunu Iwi Incorporated on HBRC's Proposed Change 5	Ngāti Kahungunu Iwi Incorporated

2012	Submission from Te Taiwhenua o Heretaunga on Proposed Plan Change 5 to the RPS	Te Taiwhenua o Heretaunga
2012	The Stage 1 Report on the National Freshwater and Geothermal Resources Claim, Wai 2358	Waitangi Tribunal
2014	Statement of Evidence by Stephen Swabey ENV-2013-WLG-000050	Hawke's Bay Regional Council
2015	Decision [2015] NZEnvC50 - ENV-2013-WLG-000050	Environment Court
2015	Groundwater level changes in the Heretaunga and Heretaunga Basins from 1994 – 2014	Hawke's Bay Regional Council
2015	Hapū Management Plan - Mana Ake - Nga Hapū o Heretaunga	Te Taiwhenua o Heretaunga
2015	Heretaunga Plains Groundwater Management and Investigations	Hawke's Bay Regional Council
2016	Groundwater Quality State of Environment: State and Trends	Hawke's Bay Regional Council
2016	Spatial Oxygen-Flow Models for Streams of the Heretaunga Plains	Hawke's Bay Regional Council
2016	Heretaunga Tamatea deed of settlement + documents schedule	Heretaunga Tamatea and the Crown
2017	Modelling Effects of Increased Groundwater Allocation on Stream Flows in the Heretaunga Plains	Hawke's Bay Regional Council
2018	Aquifers	Hawke's Bay Regional Council
2018	Cultural Values Table	Hawke's Bay Regional Council

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the values of the Heretaunga aquifer are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the values attributed to the Heretaunga aquifer in those documents referred to in Table 1, above. In accordance with decisions made by the RPC in June 2017, economic and consumptive use values have not been discussed in detail in this report.
3. The report will focus on the cultural values associated with the aquifer system, its groundwater ecosystem and its natural characteristics, not its productive qualities.

Overview

4. The Heretaunga aquifer is a major aquifer system underlying most of the Heretaunga Plains. The aquifer system is a significant resource for Hawke's Bay, with 161 million m^3 of water consented for domestic, municipal, industrial, horticultural and agricultural use, annually. Up until recent years, it has provided untreated drinking water to the cities of Napier and Hastings.
5. The Heretaunga aquifer system is mostly an alluvial system that infills a fault-bound depression that is around 900 metres deep or more. The aquifer system, including peripheral valley aquifers, covers an area of approximately 510 km^2. Travel time of water through the aquifer system varies considerably taking up to 7 years in some parts, to decades and hundreds of years in others.
6. Three major surface water bodies, being the Ngaruroro, Tutaekurī and Tukituki rivers, and numerous other smaller rivers and streams flow over and beside the Heretaunga Plains. There is a strong hydraulic connection between the Heretaunga aquifer and these surface water bodies. The vast majority of recharge to the Heretaunga aquifer system is via recharge from the Ngaruroro River.
7. The Heretaunga aquifer is a living ecosystem which is home to various unseen ecological communities. The aquifer ecosystems itself, as well those surface water ecosystems connected to the aquifer, have intrinsic value, are biologically diverse, and provide important ecosystem functions, such as water purification and flood control.

Location

8. The Heretaunga Plains comprise an area of around 300 km^2 on the east coast of the North Island. The aquifer system underlies most of the Heretaunga Plains, from Napier and the Hawke's Bay coast in the northeast, to Maraekakaho, Roys Hill and Taradale in the west, and Bridge Pa, Pakipaki and Pukahu in the south.

9. Figures 1 and 2 below show the general extent of the Heretaunga Plains aquifer system and the key waterways which flow over the Heretaunga plains, including their typical summer patterns.

Figure 1: Heretaunga plains aquifer system – general extent

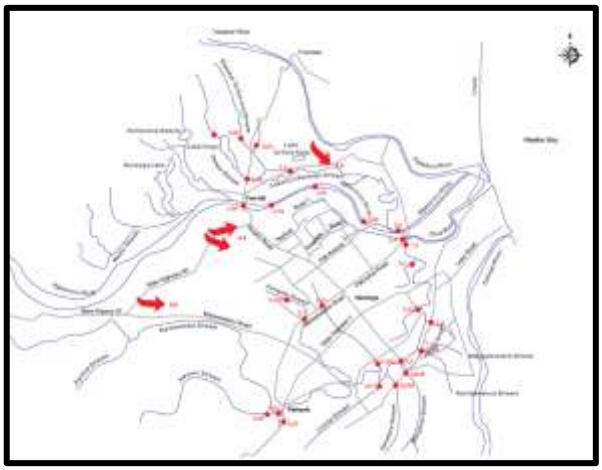


Figure 2: Heretaunga aquifer system -rivers and streams

*Cultural values **

10. The Heretaunga aquifer has long been regarded as a taonga of Ngāti Kahungunu and is part of Heretaunga Tamatea's traditional rohe.

11. The Heretaunga aquifer was known by Ngāti Kahungunu as the Heretaunga Ararau Haukūnui, being a large water resource, represented in the many rivers, creeks, and small tributaries fed by underground springs, springs of water, swampy ground, swimming holes, rock pools and quick sands. These areas supported an abundant supply of fish and water fowl, and was a primary food resource.

12. The importance of the aquifer is reflected in the whakatauki that represents Ngāti Kahungunu pride: Heretaunga ararau; Heretaunga haukūnui; Heretaunga hāro te kāhu; Heretaunga takoto noa.

13. In this play on words, Heretaunga ararau stands for both the myriad of waterways through the great swamps and the myriad of hapū that they linked together on the shore. Haukūnui describes the waters as a system of repo or swamps, awa or rivers and puna or springs, the life giving waters from deep within the earth. Hāro te kāhu sees the whole through the eyes of the soaring hawk, the plains standing solitary below, takoto noa, needing no other embellishment.

14. Ngāti Kahungunu has made various submissions to the regional council outlining the importance of the aquifer, not just from a traditional cultural perspective, but from a contemporary economic viewpoint.

15. Attachment 1 contains a more detailed explanation of the cultural values associated with the Heretaunga aquifer.

Aquifer characteristics

16. The Heretaunga aquifer system, including peripheral valley aquifers, is around 510 km^2 in size and consists of gravels, sands, silts, clays and shells deposited as a result of river and marine processes over the last 250,000 years. Its productive aquifers are generally within the non-marine river gravel deposits with the

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

deposition of finer marine sediments forming the confining layers. The aquifer system is relatively unconfined west from around Flaxmere becoming progressively confined to the east by a wedge of marine sediments.

17. The Heretaunga aquifer system comprises a number of aquifers, including:

    - The Ngaruroro-Tutaekuri aquifer system (main aquifer under the Heretaunga Plains – approx. 300 km^2)
    - The Tukituki aquifer system (eastern coastal margin of the plains)
    - The Moteo Valley aquifer system (are formally occupied by the Tutaekuri River)
    - The Valley aquifer systems (before the Ngaruroro and Tutaekuri rivers cross)
    - The peripheral limestone aquifer system (hills on the southern and western margin of the plains).

18. The Heretaunga aquifer system is primarily recharged by the Ngaruroro River at the western margin of the Heretaunga Plains. A major recharge zone occurs between Roys Hill and Fernhill, with a minor recharge zone occurring from Maraekakaho to Roys Hill. Surface water infiltrates into the unconfined aquifer, and then downward and horizontally through the subsurface to recharge deeper confined aquifers.

19. The Tutaekuri and the Tukituki rivers recharge the relatively shallow aquifer systems in the northern and southeastern parts of the Heretaunga Plains. None of the aquifer systems have been identified as being completely isolated.

20. The groundwater derived from the Ngaruroro River flows quickly through the unconfined sector of the aquifer towards the coast with groundwater in the confined section moving as little as 2 metres per day.

21. A cross section of the Heretaunga Aquifer is contained in Attachment 2.

Recreation values

22. There are no recreational values associated with the Heretaunga aquifer itself, however the aquifer system does provide an important supporting function to recreational activities undertaken on rivers and streams hydraulically connected to the aquifer system.

Ecology values

23. Aquifers are living ecosystems which are dependent on the subterranean presence of water. Aquifer ecosystems provide a diversity of habitats, such as sand, gravel, fractured rock and karst systems that are home to various unseen ecological communities. Attachment 3 contains a diagram of a naturally functioning groundwater ecosystem.

24. These ecosystems include all of the life present in the physical space of the aquifer system, from microorganisms, such as bacteria, fungi and archaea, to primitive invertebrate animals (protozoa, nematoda stygofauna and troglofauna) and advanced invertebrates. These communities interact with each other and their non-living environment and perform natural ecological processes in the absence of light.

25. Groundwater life is rarely seen. This is because access is difficult and bores are usually designed to exclude all but water. This means there is limited understanding of aquifer ecosystems. Despite this, literature suggests that most aquifers support significant biodiversity with complex life persisting to substantial depths.

26. The different components of the Heretaunga aquifer's ecosystem are discussed in more detail below.

Microorganisms

27. Microscopic organisms are commonly known as microorganisms or microbes and are an important part of an aquifers ecosystem. The microbial communities generally have significant biodiversity and can adapt to living in nutrient-poor and anaerobic conditions found in deep and/or confined aquifer systems. Because of this, some microbial communities found in aquifers grow slowly and have a low tolerance to rapid changes.

Stygofauna and troglofauna

28. Subterranean life is divided into two classes of animals, stygofauna and troglofauna. Stygofauna refers to all aquatic fauna in a groundwater environment, and troglofauna are associated with caves and spaces above the water table, but still part of the aquifer system. There are no known cave or karst systems associated with the Heretaunga aquifer system so it in unknown if troglofauna are present in this aquifer system.

29. Stygofauna are aquatic animals which live in groundwater. They have adapted to life underground (i.e. no body pigments, no or very small eyes, elongated bodies, elongated antennae), survive on a limited food supply and are extremely energy efficient. Stygofauna feed on plankton, bacteria and plants found in streams and are thought to live longer than other terrestrial species

30. Stygofauna are important for several reasons. They are intrinsically significant as individual species, particularly where they have a restricted geographical range. These species are known as short-range endemics, which provide insights into evolutionary processes. Stygofauna also cycle nutrients within groundwater systems, and assist with keeping the finer pore spaces in the aquifer open, by ingesting and digesting bacteria, allowing water to flow through these tiny spaces.

31. While few studies have been undertaken looking into aquifer ecosystems in New Zealand, it is believed that New Zealand's stygofauna is widespread and diverse, with high endemism. This is largely because New Zealand's geological past has led to long term separation of habitats and populations, which drives high diversity particularly when many species are confined to very restricted geographical ranges.

32. In isolated aquifers and geological units stygofauna have no opportunity to migrate to another location which results in high diversity. In the Heretaunga aquifer system, none of the aquifers appear to be totally isolated, which suggests stygofauna species distributions, including any short range endemics, will be relatively widespread through the whole aquifer system.

Karst and spring systems

33. Studies indicate that major karst and spring systems associated with underground aquifers generally provide a very large habitat for complex, interconnected interstices ideal for the bacteria and invertebrates.

34. Notable examples, include the major karst systems under Mounts Owens and Arthur in Tasman, which are the longest and deepest cave systems in the southern hemisphere, and the Te Waikoropupū Springs which are the largest and clearest freshwater springs in New Zealand. Both areas have significant hydro-geological features which provide for extremely high and unique biodiversity values in these areas.

35. While, a number of rivers, streams and springs are hydraulically connected to the Heretaunga aquifer system, there are no known large freshwater 'blue' springs, such as the Te Waikoropupū Springs, or major karst systems in this area.

Water age

36. Groundwater generally moves from a recharge area to a discharge area. The course taken by water moving through the aquifer is called a flow path and varies depending on the thickness and the spatial extent of the aquifer system. The age and flow path of groundwater plays an important ecological role in supporting the aquifer's ecosystem.

37. Groundwater gets older along a flow path, with groundwater quality varying with depth. In most aquifer systems, groundwater flows faster horizontally than vertically. This means groundwater typically flows more rapidly through the upper parts of an aquifer, and groundwater gets older with depth.

38. Rates of groundwater movement in the deeper Heretaunga Plains aquifer vary significantly, and can take decades to hundreds of years from the input point in the west of the aquifer to the eastern part of the aquifer system. Conversely, the groundwater flows through the unconfined section of the aquifer system can be fast moving and in the order of hundreds of metres per day towards the coast.

Groundwater dependant ecosystems (rivers, streams, wetlands and springs)

39. Groundwater dependant ecosystems are those ecosystems which need inputs of groundwater to maintain their current structure and functions and can include rivers, streams, wetlands and springs.

40. Three major rivers flow across the Heretaunga Plains, being the Lower Tukituki River, the Tutaekuri River and the Ngaruroro River. Other surface water bodies known to be hydraulically connected to the Heretaunga aquifer system and the three major rivers, include low land streams such as the Raupare Stream, Awanui Stream, Karewarewa Stream, Karamū River and Irongate streams, Mangateretere Stream and Tutaekuri-Waimate Stream.

41. There is clear interaction between the groundwater and surface water bodies which flow over the Heretaunga Plains, with a number of streams being spring dominated and fed from groundwater. The

majority of groundwater leaving the Heretaunga Plains aquifer system returns to spring-fed streams and rivers in the lower plains

42. The water quality and quantity and the ecology of the Heretaunga aquifer system is important to the ecological health of those surface water bodies with strong hydraulic connections to the aquifer system. i.e. poor aquifer health, or decreased water quantity, may impact on water levels or water quality in highly connected surface water bodies.

Water Quality

43. Groundwater quality in aquifers across New Zealand varies. It depends on a range of factors such as nearby land uses, the soil composition above the water table, the geology of the aquifer and the groundwater residence time.

44. Hawke's Bay Regional Council regularly monitors the quality of groundwater in the Heretaunga aquifer at twenty two sites. The primary aim of this monitoring is to ensure the groundwater meets health and aesthetic based standards, as opposed to protecting the biodiversity values of the aquifer ecosystems.

45. The water quality of the Heretaunga aquifer system with regard to 'health and aesthetics' and 'ecosystem health' is discussed further below.

Water quality – health and aesthetics

46. The quality of groundwater in the Heretaunga aquifer system is measured against the New Zealand Drinking Water Standards to ensure the water is suitable for human consumption.

47. Overall, most monitoring sites comply with the New Zealand Drinking Water Standards (DWSNZ) for the key chemical water quality parameters[1]. The exceptions are elevated concentrations of iron, manganese, ammoniacal-nitrogen, hardness and phosphorus which occur in the deeper parts of the aquifer system (deeper than 50 metres) and are thought to be naturally occurring. Microbiological non-compliance was found for *E.coli* at 20% of the monitoring sites, in the 5-year monitoring period between 2009 and 2014.

48. In 2018, elevated concentrations of arsenic were found in groundwater samples from several private bores drawing water from the Heretaunga aquifer. The elevated arsenic levels are naturally occurring and local to specific bores and do not occur consistently throughout the Heretaunga aquifer system.

49. Each of the water quality parameters measured as part of HBRC's programme are summarised in more detail in Table 2, below. This data has been obtained directly from the 5 yearly State of the Environment Report 2009 – 2014.

Table 2: Water Quality – Heretaunga aquifer (2009 – 2014)

Water quality parameter	Compliance /non-compliance with DWSNZ guidelines
pH	Groundwater at all sites falls within the optimum guideline pH range of 7 to 8
Total Dissolved Solids (TDS)	The TDS concentrations at all sites are below the guideline value of 1000 mg/L.
Total Hardness	87% of the sites have total hardness levels below the guideline value of 200 mg/L.
Iron and Manganese	Ninety one percent of sites comply with the maximum accepted value for manganese, and fifty seven percent of sites comply with the aesthetic guideline value for manganese[2]. The two sites which exceed the maximum accepted values for manganese are located in deeper parts of the aquifer system and the elevated concentrations are thought to be naturally occurring. Eighty seven percent of the sites comply with the guideline value for iron. Two Monitoring bores exceed the aesthetic guideline value, with concentrations thought to be natural occurring. Elevated iron and manganese levels are a characteristic of aquifer systems where reducing (oxygen-poor) conditions exist naturally. The combined effects of reducing conditions and

[1] HBRC does not monitor for all chemical water quality parameters in the NZDWS.

[2] Aesthetic determinant = manganese concentrations at a level which can adversely affect the water's taste, odour, colour, clarity or general appearance.

	a long residence time of the groundwater in the aquifer encourage dissolution of iron and manganese present in aquifer materials. Monitoring indicates that the confined aquifer system mostly has mean residence times of approximately 36 years, with the deep aquifer systems having mean residence time of greater the ninety years
Nitrate-Nitrogen	All sites comply with the short-term and long-term maximum accepted value in the DWSNZ.
Ammoniacal-N	96% of monitoring sites on the Heretaunga Plains aquifer system comply with the DWSNZ aesthetic guideline value of 1.5 mg/L. One deep bore exceeded the guideline value, which is thought to be naturally occurring.
Phosphorus (Soluble Reactive Phosphorus - SRP)	Phosphorus levels at sites are generally less than 0.05 mg/L. However, several monitoring bores in the deeper parts of the aquifer system have elevated phosphorus, which is likely to be related to long residence times, which has enabled enough time for phosphorus to leach from minerals in the aquifer matrix.
Sulphate	All sites have sulphate levels below guideline levels of 200 mg/L.
Sodium and Chloride	All sites have sodium and chloride levels below aesthetic guideline levels for sodium and chloride.
Microbiological Indicator (*E. coli*)	Seventy percent of monitoring sites complied with the DWSNZ level. Twenty percent of monitoring bore had 1 cfu/100 mL in the 5-year period of monitoring, with two bores having more than one detection (six and four detections, respectively).

Water quality – ecosystem health

50. The geology of an aquifer has a significant effect on the natural water chemistry within an aquifer system. This means the 'natural water quality' within each aquifer system varies. For example, if dominant rock types present in the aquifer has soluble materials, such as limestone, the groundwater will have higher concentrations of ions, than in aquifers with less soluble materials such as insoluble quartz pebbles. Additionally, the chemical makeup of groundwater with longer residence time will be completely different to that of water with low residence time.

51. Over a period of time the fauna and microbial communities living in an aquifer become highly adapted to its living space and its natural water quality. This means the 'optimal' state of water quality required to protect each aquifer system is different, and might not necessarily correlate with the New Zealand Drinking Water Standards. For example, the water quality parameters for ecosystems with aquifers with brackish water will be completely different to that of freshwater aquifers.

52. To date, no monitoring or investigations have taken place looking into the standard of water quality required to protect the biodiversity value of the ecosystems living the Heretaunga aquifer system.

Values Summary

Overarching Value	Sub-value	Description	Outstanding Yes/no	Comments
Cultural	TBC	TBC	TBC	TBC
Recreational	TBC	TBC	TBC	TBC
Ecological	TBC	TBC	TBC	TBC
Landscape	TBC	TBC	TBC	TBC
Natural Character	TBC	TBC	TBC	TBC

Attachment 1

Heretaunga Aquifer - Cultural Values Report

Key Cultural Values
Spiritual Values

Table 1: List of documents reviewed

Year	Name	Author
2004	Lightless, not lifeless: New Zealand's subterranean biodiversity	NIWA
2012	Initial comments on HBRC's Draft Change 5, NKII	Ngāti Kahungunu Iwi Incorporated
2012	Submission from NKII on HBRC's Proposed Change 5, NKII	Ngāti Kahungunu Iwi Incorporated
2012	Submission from Te Taiwhenua o Heretaunga on Proposed Plan Change 5 to the RPS	Te Taiwhenua o Heretaunga
2015	Heretaunga Plains Groundwater Management and Investigations	Hawke's Bay Regional Council
2016	Groundwater Quality State of Environment: State and Trends	Hawke's Bay Regional Council
2016	Heretaunga Tamatea Deed of Settlement Documents	Heretaunga Tamatea and the Crown
2018	Cultural Values Table	Hawke's Bay Regional Council

*1. Introduction**

Purpose

The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the Heretaunga aquifer are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

This report presents the summarised findings of the cultural values attributed to the Heretaunga aquifer in those documents referred to in Table 1, above.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

The report summarises the cultural values associated with the Heretaunga aquifer into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all water bodies are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Importance

The Heretaunga aquifer has long been regarded as a taonga of Ngāti Kahungunu and is part of Heretaunga Tamatea's traditional rohe - one of six large natural groups negotiating the settlement of Ngāti Kahungunu Treaty of Waitangi claims.

The importance of the aquifer is reflected in the whakatauki that represents Ngāti Kahungunu pride:

Heretaunga ararau

Heretaunga haukūnui

Heretaunga hāro te kāhu

Heretaunga takoto noa

In this play on words, Heretaunga ararau stands for both the myriad of waterways through the great swamps and the myriad of hapū that they linked together on the shore. Haukūnui describes the waters as a system of repo or swamps, awa or rivers and puna or springs, the life giving waters from deep within the earth. Hāro te kāhu sees the whole through the eyes of the soaring hawk, the plains standing solitary below, takoto noa, needing no other embellishment.

The Heretaunga aquifer was known by Ngāti Kahungunu as the Heretaunga Ararau Haukūnui, being a large water resource, represented in the many rivers, creeks, the small tributaries fed by underground springs, springs of water, swampy ground, swimming holes, rock pools and quick sands. These areas supported an abundant supply of fish and water fowl, a primary food resource.

In describing the Heretaunga Muriwaihou (Heretaunga aquifer system) evidence from Te Hira Huata provided at the Waitangi Tribunal hearing of WAI 2358 was quoted "The extraordinary clean water from the springs, and from the streams that flowed from them, was the elixir of life for the hapū, feeding and cleansing body, soul and mind, and as important for ritual as it is for bodily needs".

Ngāti Kahungunu has made various submissions to the regional council and central government outlining the importance of the aquifer, not just from a traditional cultural perspective, but from a contemporary viewpoint. For example, the submission from NKII on HBRC's Proposed Change 5:

The Heretaunga aquifer system is the manawa or beating heart of the Hastings economy, supplying water of exceptional quality for domestic, industrial and agricultural use, for most uses or purposes, it requires no treatment. Protection of the aquifer from contamination is paramount if our economy is to remain competitive.

The Hapū Management Plan: Mana Ake - Nga Hapū o Heretaunga prepared by Te Taiwhenua o Heretaunga outlines specific issues and policies around contemporary management of the aquifer resource as follows:

We are Kaitiaki of the Heretaunga aquifer resource as it is central to the mana and mauri of our marae hapū.

- *Support and advance rangatiratanga in respect of the Heretaunga aquifer resource under Article 2, Treaty of Waitangi.*
- *That we are kaitiaki of the Heretaunga aquifer resource as it is central to the mana and mauri of our marae hapū and this is not dependent upon title to the surface of land.*
- *Protection of the aquifer resource is paramount and mining, exploratory and/or actual drilling, fracking, industrial development or use, experimental use, or other use that puts the resource at risk, is not supported.*

- *Require that existing water takes are monitored and proposed future takes are not permitted without consultation with hapū, due diligence and robust scientific evidence on risk to the aquifer resource is made to affected parties and nga hapū o Heretaunga.*
- *Hapū reserve the right to manage the Heretaunga aquifer resource in partnership with authorities.*

TANK Group

The TANK Group has been working since 2012 on land and water management issues for the Tutaekurī, Ahuriri, Ngaruroro and Karamū catchments. Its purpose is to recommend limits and measures for a workable plan change. TANK's collaborative membership includes more than 30 groups, representing Tāngata Whenua, primary sector, councils and environmentalists.

The TANK group has been progressing a cultural values framework, identifying values and attributes to characterise water quality.

2. Archaeology

Archaeological sites across the Heretaunga Plains are shown below. Please note, many pits and terraces are not labelled for easier viewing.

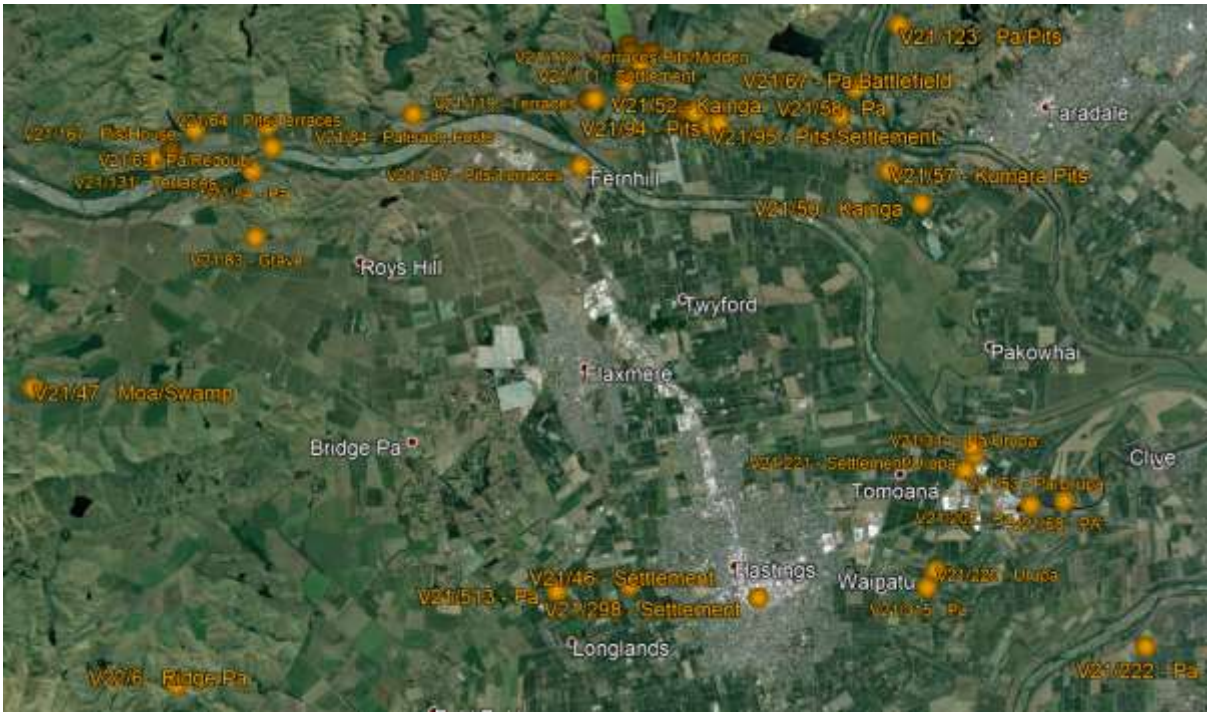


Figure 1: Archaeological Sites across the Heretaunga Plains – north of Hastings

Figure 2: Archaeological Sites across the Heretaunga Plains – south of Hastings

3. Statutory Acknowledgement Area of Interest

Figure 3: Heretaunga Tamatea Area of Interest

4. Resource Management Plans

The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to the Heretaunga aquifer. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Iwi and Hapū Resource Management Plans
Kahungunu ki Uta, Kahungunu ki Tai: Marine & Freshwater Fisheries Strategic Plan
Mana Ake - An Expression of Kaitiakitanga, Te Taiwhenua o Heretaunga

Regional Resource Management Plan
Schedule 4: Known Productive Aquifer Systems in the Hawke's Bay Region
Schedule 5: Heretaunga Plains Contaminated Vulnerability based on specifically modified DRASTIC factors for confined aquifers
Schedule 5a: Heretaunga Plains Unconfined Aquifer
Schedule 6: Ground Water Management Zones
Schedule 6b: Catchments sensitive to animal effluent discharges

Regional Coastal Environment Plan
Schedule O: Known Productive Aquifer Systems in Hawke's Bay Coastal Environment

Hastings District Plan
Appendix 59: Heretaunga Unconfined Aquifer

Attachment 2: Cross Section through Heretaunga Aquifer

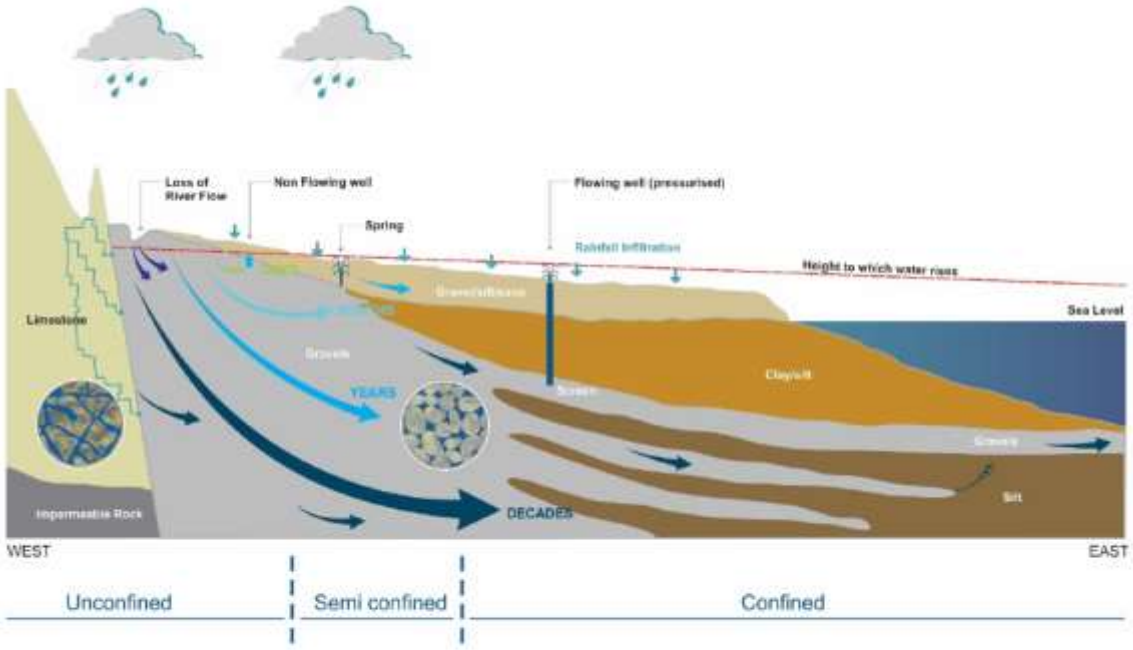


Figure 2-2: Conceptual cross section through the Heretaunga Plains groundwater system from Maraekakaho at the top of the Heretaunga Plains to the coast (Hawke Bay) The main Heretaunga aquifer system is confined by marine silt and clay.

Figure 1: Cross section thorough the Heretaunga aquifer system

Attachment 3: Typical Groundwater Ecosystem

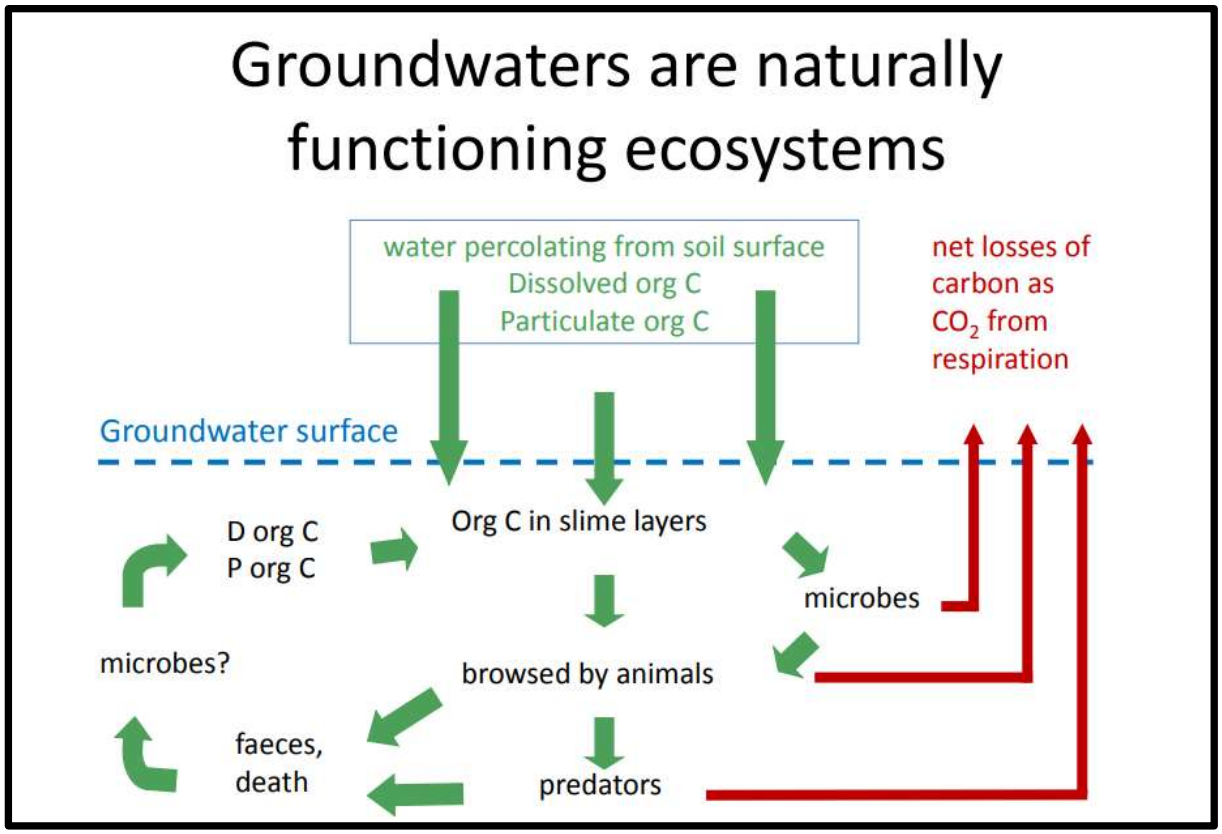


Figure 1: Typical groundwater ecosystem

Karamū Stream

Key Cultural Values
Spiritual Values
Wāhi Tapu, wāhi taonga, wai tapu
Mahinga kai, Pā tuna
Pā, Kāinga

Table 1: List of documents reviewed

Year	Name	Author
2009	The eel (tuna) stocks of Lake Poukawa, Hawkes Bay	Don Jellyman and Julian Sykes
2009/2012	Ngāti Hori Freshwater Resources Management Plan: Operation Patiki	Ngāti Hori
2012	Rei Ora Newsletter: Tāngata Whenua as Environmental Guardians	Te Taiwhenua o Heretaunga
2013	Board of Inquiry for Tukituki Catchment Proposal: Statement of Evidence of Margaret McGuire on behāalf of Operation Patiki and Kohupatiki Marae	Margaret McGuire
2014	Whakatu Arterial Link, Hawke's Bay: Archaeological Assessment	Simon Bickler and Rod Clough
2016	Heretaunga Tamatea Deed of Settlement	Heretaunga Tamatea and the Crown
2018	Cultural Values Table	Hawke's Bay Regional Council
	Working towards a model for determining water allocation for customary fisheries: the case of Ngāti Hori ki Kohupatiki	M. Durette & M. Barcham
2018	Kahuranaki marae website	Kahuranaki marae

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the Karamū Stream are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the cultural values attributed to the Karamū Stream in those documents referred to in Table 1, above. For clarification, the Karamū Stream has been identified as potentially outstanding for the cultural value set only. In accordance with decisions made by the RPC in

May 2018, this report does not discuss the recreation, landscape and ecology values associated with the Karamū Stream.

3. The report summarises the values into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

4. Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Overview

5. The Karamū Stream is culturally significant for the people of Heretaunga Tamatea.

6. There are many sites of historical and cultural significance, including numerous pā. The Karamū Stream has long been an important freshwater fishery for hapū in Heretaunga. Lake Poukawa is a significant customary tuna fishery. The Lake Poukawa area has been the scene of many battles.

7. Ngāti Hori have a strong association with Te Karamū. They are kaitiaki (guardians) of the lower Karamū Stream and have a close historic and traditional relationship with the Karamū and the former Ngaruroro River. The importance of the Lower Ngaruroro and Karamū Rivers to Ngāti Hori is reflected in the location of Kohupatiki Marae, which is situated on the true left bank of the lower Karamū.

8. In a more contemporary context, Ngāti Hori have a registered hapū management plan with the Hawke's Bay Regional Council. They have indicated that their cultural values in the Karamū Stream, especially in customary fisheries, are dependent on the restoration of minimum flow levels that have been impacted due to the extensive historic river diversion.

9. The TANK group has been progressing a cultural values framework, identifying values and attributes to characterise water quality.

Location

10. The Karamū Stream and its tributaries drain the Poukawa Basin, the Kōhinerākau, Kaokaoroa and Raukawa Ranges and a large part of the Heretaunga Plains. It has a total catchment area of approximately 510 km².

11. The Karamū Stream begins in Lake Poukawa (also known as Te Wai-nui-a-Tara), which is a small shallow lake situated approximately 15 km south of Hastings. From Lake Poukawa the Karamū Stream travels through to Maungawharau, Havelock North, and then into the Karamū area, where it passes Ruahāpia, joining the Clive River at Pākōwhai and then out to Waipūreku, Clive.

12. The current Karamū Stream was once a former course of the Ngaruroro River, until 1867 when a large flood changed the course of the river.

13. The catchment area for the Karamū Stream can be seen in Figure 1.

Figure 1: Karamū catchment

*Cultural values **

Importance

14. The Karamū Stream is culturally significant for Heretaunga Tamatea, who are one of six large natural groups negotiating the settlement of Ngāti Kahungunu Treaty of Waitangi claims. There are many sites of historical and cultural significance including pā along its banks. The stream once formed part of the Ngaruroro River, which was navigable from Clive to Bridge Pa and allowed boats and waka to carry passengers between these locations until the 1867 flood.

15. At some points along its length the Karamū Stream has different names. From Hawke's Bay to Pākōwhai it is now known as the Clive River. From Pākōwhai to Awanui it is known as the Karamū Stream. From Awanui to Longlands and around Flaxmere it is known as Te Awa-o-te-Atua. From Te Awa-o-te-Atua to Poukawa, also known as Te Wainui-a-Tara, it again takes the name Karamū Stream (Deed of Settlement).

16. Ngāti Hori - a hapū of Ngāti Kahungunu ki Heretaunga, have a strong association with Te Karamū. They are kaitiaki (guardians) of the lower Karamū Stream and have a close historic and traditional relationship with the Karamū and the former Ngaruroro River. The importance of the Lower Ngaruroro and Karamū Rivers to Ngāti Hori is reflected in the location of Kohupatiki Marae, which is situated on the true left bank of the lower Karamū.

17. Ngāti Hori's knowledge of the Karamū Stream and the species it supports comes from an unbroken and ongoing relationship stemming back hundreds of years. Local Ngāti Hori fishermen know intimately the patterns of the waterways and its species, and the older members of the wider Ngāti Hori community are able to recall the waterway as it once was compared to the waterway in its present state (Durette & Barcham).

Ngāti Hori Freshwater Resources Management Plan

18. In a more contemporary context, Ngāti Hori have a registered hapū management plan with the HBRC, Ngāti Hori Freshwater Resources Management Plan 2009/2012. This plan covers from the river's mouth to where the Karamū Stream flows past Kohupatiki up to Pākōwhai the beginning of the Raupare stream.

19. Ngāti Hori is concerned about the continued deterioration of the Karamū Stream and in particular a decline in their customary fisheries, especially the pātiki which are a key aspect to the identity of Kohupatiki as a marae. Ngāti Hori has indicated that their cultural values in the Karamū Stream, especially in customary fisheries, are dependent on the restoration of minimum flow levels that have largely been destroyed due to the extensive historic river diversion. Flow levels in the Karamū Stream are thus of primary importance to Ngāti Hori's role as kaitiaki of the area and the species once well supported by the stream system (Ngāti Hori Freshwater Resources Management Plan).

TANK Group

20. The TANK Collaborative Stakeholder Group has been working since 2012 on land and water management issues for the Tutaekurī, Ahuriri, Ngaruroro and Karamū catchments. Its purpose is to recommend limits and measures for a workable plan change. TANK's collaborative membership includes more than 30 groups, representing tāngata whenua, primary sector, councils and environmentalists.

21. The TANK Group has been progressing a cultural values framework, identifying values and attributes to characterise water quality.

Spiritual Values

22. The name Karamū encapsulates a sacred corpus of oral traditions that describe the deeds of tūpuna, imbuing the land with character, shape and mana in order to protect it, and kaitiakitanga to maintain and develop it (Deed of Settlement).

Wāhi tapu, wāhi taonga, wai tapu

23. Waahi tapu are recorded in the Hastings District Plan along the old river banks and for the most part comprise family burial grounds dating from the 19th and 20th centuries. Ruahāpia Marae is located west of the Karamū Stream with associated cemeteries nearby (Bickler and Clough).

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

Mahinga kai

24. The long history of Māori occupation and travel on and around the Karamū Stream has enabled hapū to accumulate extensive knowledge of its natural resources and to develop sustainable management practices around the use of fisheries, forests, and kai in and around the Karamū Stream.

25. The Karamū Stream has long been an important freshwater fishery for hapū in Heretaunga. The lakes Poukawa, Roto a Tara, Roto a Kiwa were also significant food gathering areas.

26. Lake Poukawa and its eel fishery are of considerable cultural importance to the people of Te Hauke and their hapū Ngai Te Rangikoianake. The lake was extensively fished by commercial eel fishers in the 1960's to mid 1970's, to the extent that Mitchell (1984) recommended that such activity should be prohibited.

27. In 1996, a survey of the eel stock (Jellyman and Bonnett 1996) indicated that eels were in good condition and the stock was showing signs of recovery – at that stage the lake was not closed to commercial eel fishing although there was an informal arrangement that such fishing would not take place. Since then, the lake has been declared a non-commercial fishery, and eels are only harvested by local Tāngata Whenua for customary purposes. The present survey was a follow-up to that of 1996, to see whether specific management recommendations from that survey that had been implemented, were having some beneficial effects.

28. For Te Hauke iwi, the depletion of eels from the lake represents a severely depleted resource - the history of Lake Poukawa is directly related to the eels of the lake, and the mana of each chief of Te Wheao is related to control of the lake and its resources (Hawkes Bay Regional Council 1988). In recognition of these high traditional values, the regional council's policy is that water management should not affect the eel fishery (Hawkes Bay Regional Council 1988).

29. The Trustees have banned all commercial fishing from taking place within Lake Poukawa. The eel fishery at present sustains customary events primarily located at Kahuranake Marae, Te Hauke and local whanau requirements (Jellyman and Sykes).

Pā, Kāinga

30. The Whakatu area in the lower Karamū catchment was occupied for a number of centuries prior to the arrival of Europeans. Various hapū, and in particular those associated with Rangitane, are linked with the early settlement of the region, with the subsequent arrival of Ngāti Kahungunu during the mid-16th century.

31. A number of pā sites are recorded near the rivers that flow, or once flowed, across the area and some of the various hapū historically associated with the land continue to live in the area (Bickler and Clough).

32. These pā include Ruahāpia, Piringaitiowaikato, Taunoke and Herepu. These pā all drew on the resources of the river for sustenance (Deed of Settlement).

33. Te Wheao Pā is located behind Kahuranaki Marae (near Lake Poukawa) and was the place where Rangikoianake's sons were trained in leadership and chieftainship before being married out to different parts of Heretaunga Tamatea.

34. The Kahuranaki Marae website has the following story about the origin of the name 'Poukawa':

    According to Hori Tupaea, grandson of Te Hapuku and a chief who dominated the affairs of his people for many years, the name Poukawa arose thus:

    Directly behind Te Hauke in the hills, stood a pā called Te Wheao. He said that it became famous because of the large number of chiefs and chiefly families who lived in it. Two of these chiefs were Te Rangikawhiua, the paramount chief, and Te Rangi-Hirawera of a lineage junior to that of Te Rangikawhiua. It was obvious from the beginning that there was little room for these two fiery, headstrong chiefs. The lesser chief decided to leave Te Wheao and seek another area in which to live. This he found at the north-eastern edge of the lake. In due course, Te Rangihirawera began to claim a portion of the lake as his. Naturally, the paramount chief became annoyed at the audacity of the lesser chief. Te Rangihirawera went ahead with the carving up of the lake and obtained from the nearby forest a long totara pole and drove this into the part of the lake which produced the best and fattest eels, leaving only the part which contained the lean or kawa eels for the paramount chief. Thus the two words comprising the name Pou (pole) and kawa (lean or tasteless) came into being. Eventually Te Rangihirawera was driven off and finally killed.

35. Interestingly, a 1931 article in The Journal of the Polynesian Society includes the following contribution:

Old Māoris and Pakehas acquainted with the ancient history of the district assert that Poukawa Lake derived its name from the incident of the totara pole. It has been their opinion that the pole must still exist, and that, when the lake level was lowered as a result of the present drainage operations, the head of the pole would be revealed. This opinion seems to have been borne out by the recent discovery, which was the result of close watching on the part of the officers in charge of the drainage works.

The pole is about four inches in diameter, the surface being water-worn, and the outside encrusted with a limestone deposit. Further investigations will be made when the lake has been drained to a lower level, and the Minister indicated that, if the pole appears to be identical with that placed in the lake by one of the old Māori chiefs, his Department would make suitable arrangements for protection so as to prevent the pole being removed or damaged in any way.

Conflict

36. Ngāti Hori, descend from Tahatu-o-te-rangi. Tahatu-o-te-rangi accepted a peace offering to end several decades of conflict with the northern tribes Ngapuhi, Tainui, Tuwharetoa, Ngāti Maniapoto and Ngāti Raukawa. These iwi all had, at differing times, attempted to make claim on the fertile and plentiful lands of the Heretaunga Plains, and the teeming waters of Te Whanganui-a-Orotu (Margaret McGuire Evidence).

37. The lakes Poukawa, Roto a Tara and Roto a Kiwa were sites of significant battles.

38. Some of the significant nineteenth century conflicts associated with this area are highlighted through the life and times of Raniera Te Ahiko, a nineteenth century historian associated with Ngāti Te Upokoiri. Below is a summary from Te Ara Encyclopedia:

39. Raniera Te Ahiko was born in the late eighteenth or early nineteenth century at Taumata-o-he pā near the junction of the Mangatahi Stream and the Ngaruroro River in Hawke's Bay. This pā belonged to Te Uamairangi, principal chief of Ngāti Te Upokoiri.

40. Raniera's life was to be shaped by his upbringing amidst the warlike Ngāti Te Upokoiri. He witnessed many battles in which they were involved, and came to know intimately the remote interior of the Ruahine Range and the upper Ngaruroro River. After the battles with Ngāti Kahungunu and Ngāti Te Whatu-i-apiti at Mangatoetoe and with Ngāti Kahungunu and Ngāti Kurapare at Kirikiri-tatangi, Raniera was living with Ngāti Hinepare at Te Korea on the Mangaone River near present-day Dartmoor.

41. Sometime before 1820, Tangi-te-ruru and Te Peehi Turoa raided Hawke's Bay. The local tribes gathered at Te Rae-o-Tahumata near Omahu under the protection of the chiefs Whakato and Pakapaka, staying together until the danger had passed.

42. In 1820 Ngāti Tuwharetoa and Ngāti Te Upokoiri unsuccessfully besieged Ngāti Kahungunu's island pā at Te Roto-a-Tara, near Pukehou. Ngāti Te Upokoiri then withdrew to inland Patea, in the upper Rangitikei region.

43. In 1823 a second expedition of Ngāti Tuwharetoa and Ngāti Te Upokoiri was defeated by a combined force of Nga Puhi, Ngāti Te Whatu-i-apiti and Ngāti Kahungunu at Te Whiti-o-Tu on the upper Waipawa River; Raniera then lived with his family at Pohokura in the mountains for a year as a refugee.

44. About 1824 Ngāti Te Upokoiri went to Kapiti Island to get firearms for a further expedition. They then accompanied Te Momo-a-Irawaru to Te Roto-a-Tara, where the subsequent battle saw Ngāti Te Upokoiri and Ngāti Raukawa suffer great loss of life. The surviving Ngāti Te Upokoiri chiefs sought refuge in the eastern Ruahine with Raniera, who had remained behind. They launched reprisal raids on Poukawa and Kairakau, then journeyed to exile in Manawatu.

Archaeology

45. The archaeological sites located in close proximity to the Karamū Stream are shown in Figures 2, 3 and 4.

Figure 2: Archaeological Sites in close proximity to the Karamū Stream – upper catchment

Figure 3: Archaeological Sites in close proximity to the Karamū Stream – middle catchment

Figure 4: Archaeological Sites in close proximity to the Karamū Stream – lower catchment

Statutory Acknowledgement Area of Interest

46. Figure 5 details the Heretaunga Tamatea Area of Interest.

Figure 5: Heretaunga Tamatea Area of Interest

Resource Management Plans

47. The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to the Karamū Stream or Lake Poukawa. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Iwi and Hapū Resource Management Plans
Kahungunu ki Uta, Kahungunu ki Tai: Marine & Freshwater Fisheries Strategic Plan
Ngāti Hori Freshwater Resources Management Plan 2009-12, Operation Patiki Kohupātiki Marae
Mana Ake - An Expression of Kaitiakitanga, Te Taiwhenua o Heretaunga

Regional Resource Management Plan
Minimum Flow and Allocatable Volumes for Specified Rivers - Karamū • 1,100L/s at Floodgates Minimum Flow and Allocatable Volumes for Specified Rivers - Poukawa • Poukawa Inflow Site No 1, Poukawa Site No 1a, Poukawa Inflow Site No 6, Poukawa Stream 3.4 Scarcity of Indigenous Vegetation and Wetlands • Lake Poukawa/Pekapeka Swamp a priority wetland for Works and Services from HBRC

Hastings District Plan
Appendix 50: Waahi Tapu Sites

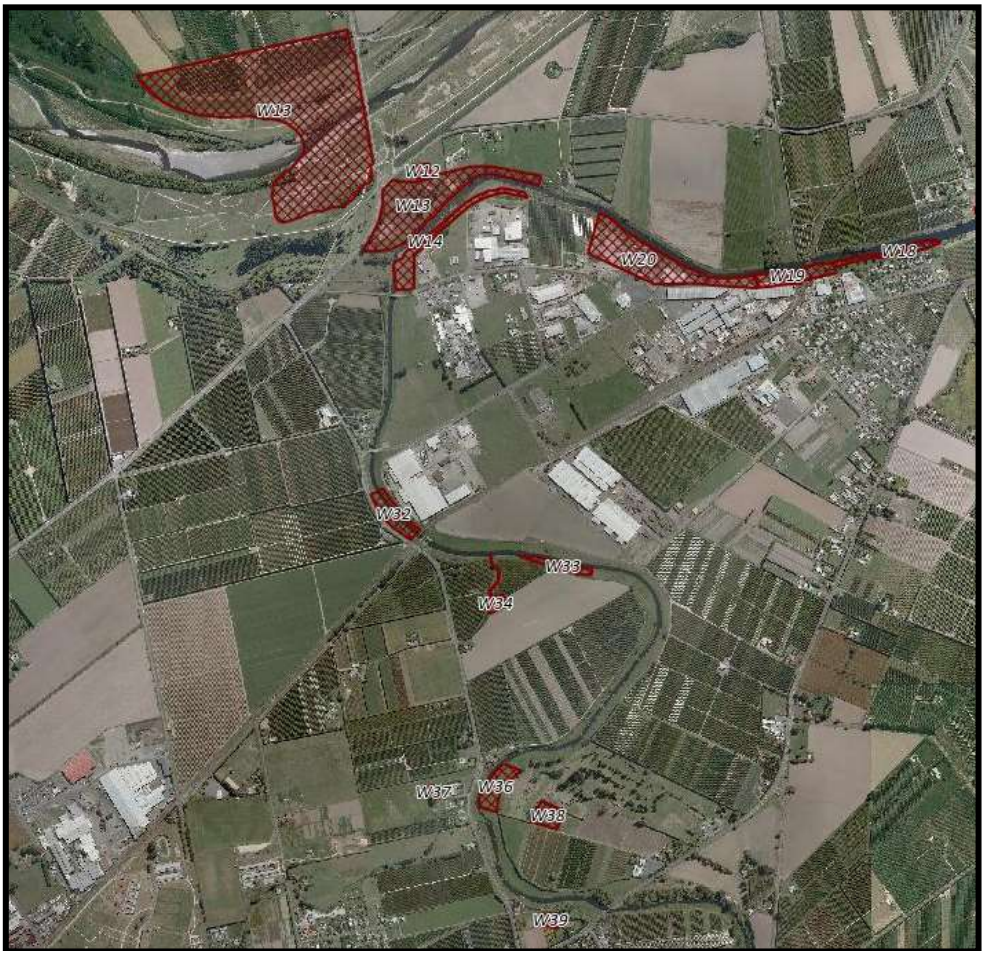


Figure 6: Waahi Tapu Sites in Hastings District Plan

Lake Tūtira
(including Papakiri Stream, Waikoau River/ Aropaoanui River)

Key Cultural Values
Spiritual Values
Wāhi Tapu, wāhi taonga, wai tapu
Mahinga kai
Pā, Kāinga, ara

Table 1: List of documents reviewed

Year	Name	Author
2004	Wai 201: The Mohaka ki Ahuriri report	Waitangi Tribunal
2010	Ngāti Pāhauwera Deed of Settlement documents	Ngāti Pāhauwera and the Crown
2016	Maungaharuru-Tangitū Deed of Settlement documents	Maungaharuru- Tangitū and the Crown
2017	Bay Buzz: Saving Lake Tūtira	Bridget Freeman
2018	Māori Television: Lake Tūtira gets multi-million dollar makeover	Aroha Treache
2018	Govt gives $1.5 million to improve the mauri of Lake Tūtira	Gisborne Herald

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with Lake Tūtira (including Papakiri Stream and Waikoau/Aropaoanui River[1]) are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

2. This report presents the summarised findings of the cultural values identified in the documents referred to in Table 1, above. For clarification, Lake Tūtira (including Papakiri Stream and Waikoau /Aropaoanui River) have been identified as potentially outstanding for the cultural value set only. In accordance with decisions made by the RPC in May 2018, this report does not discuss the recreation, landscape and ecology values associated with any of those water bodies.

3. The report summarises the values into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all of the waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

4. Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Overview

5. Lake Tūtira is a taonga of Ngāti Kurumōkihi. The physical and spiritual well-being of the Hapū is closely linked to the well-being of the lake. It was celebrated as a place of sustenance to replenish one's mind, body and soul. The Hapū have a whakatauākī (tribal proverb) about the lake being: "ko te waiū o ō tātau tīpuna" – "the milk of our ancestors". This whakatauākī references the abundance of kai that could be sourced from the lake and the lake providing spiritual sustenance.

6. Lake Tūtira was famous for the best flavoured tuna (eel). Some rongoā (medicinal plants) are only found in or around Lake Tūtira. For example, particular harakeke (flax) was used in pre and post birthing of children, and cleansing the blood. Other harakeke was renowned for its strength and was traded with whalers. It was very good for weaving whāriki (mats) and korowai (cloaks).

7. The inlet to Lake Tūtira is Papakiri Stream (or Sandy Creek) and is also integral to the identity and mana of the Hapū. Its importance is due to its connection with Lake Tūtira and its reputation as an outstanding mahinga kai site.

8. Aropaoanui River is one of the most significant awa in the taikiwā (traditional area of the Hapū). It links two of the most culturally and historically important areas of the Hapū, being Tūtira and Aropaoanui. Ngāti Pāhauwera also have a connection with the river and the Aropaoanui River Valley was an area of traditional residence. The alluvial soils near the Aropaoanui River mouth were easy to cultivate and cultivations covered the valley.

9. The Tūtira lakes, waterways and adjoining lands formed the central hub of a series of well-known and used tracks linking the Hapū with Tangitū and Maungaharuru.

10. As a prized taonga, many raids were made on Lake Tūtira. However, Ngāti Kurumōkihi have another whakatauākī, "Tūtira upoko pipi" – "Tūtira, the place where heads became soft", commemorating the success of Ngāti Kurumōkihi in defending Tūtira, their prized taonga. Tribal archives record that, other than the death of Tiwaewae, no other rangatira (chief) were ever taken and every raiding party was beaten.

11. Project Te Waiu o Tūtira (the milk of Tūtira) aims to improve water quality and ecological habitat in Lakes Waikōpiro and Tūtira. The project has been formed out of a partnership between Maungaharuru-Tangitū Trust, Hawke's Bay Regional Council, Ministry for the Environment and Tūtira local residents.

[1] Note: Aropaoanui River is also known as Arapawani River.

Location

12. Lakes Tūtira and Lake Waikōpiro are located alongside SH2 north of Napier. The lakes were formed by a land slip at least 7200 years ago. Lake Waikōpiro flows into Tūtira under a narrow strip of land, and the two lakes are effectively one lake during high water levels. In 1982, the Papakiri Stream was diverted away from Lake Tūtira due to it being the main supply of sediment and nutrients during storms.

13. Lake Tūtira is surrounding by a wildlife reserve, a regional park and private land. Lake Tūtira is one of the most scientifically studied lakes in New Zealand with core samples showing evidence from storms and eruption ash falls.

14. The Aropaoanui River/Waikoau River originates at the tihi tapu (scared peaks) of the central area of Maungaharuru, flowing through the Waikoau Conservation Area, joining the Mahiaruhe Stream at Lake Tūtira. From here it enters into the Aropaoanui valley where it is known as the Aropaoanui River.

15. The location of Lake Tūtira, the Waikoau /Aropaoanui River and Papakiri Stream can be seen in Figures 1 and 2, below. Figure 2 provides some additional facts about Lake Tūtira.

Figure 1: Lake Tūtira and Aropaoanui River

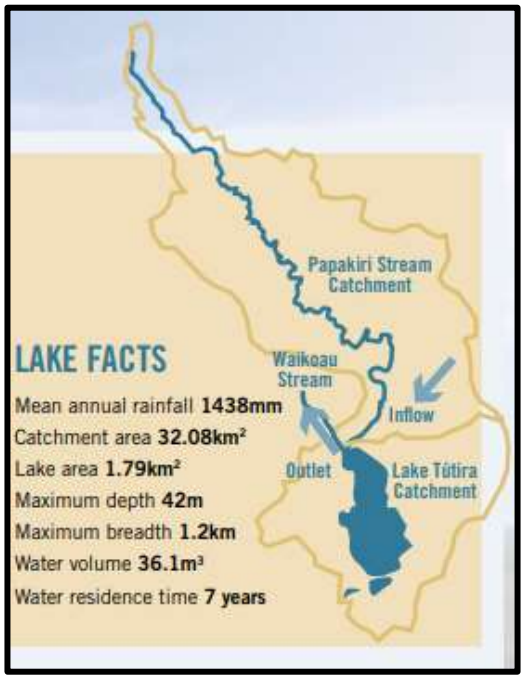


Figure 2: Lake Tūtira and Papakiri Stream

*Cultural values **

Importance

Lake Tūtira

16. Lake Tūtira is a renowned taonga of Ngāti Kurumōkihi, the physical and spiritual well-being of the Hapū is closely linked to the well-being of the lake. It was celebrated as a place of sustenance to replenish one's mind, body and soul (Deed of Settlement).

17. It provided an important connection between Maungaharuru and the coast, allowing for seasonal movements of the Hapū. During peace Ngāti Kurumōkihi dwelt around the coastal estuaries and the lake. During war they sheltered in the forests and the hinterland. There was intensive Māori occupation around Lake Tūtira and numerous sites of significance (Wai 201 Report).

18. Lake Waikōpiro and Lake Orakai are also taonga of Ngāti Kurumōkihi. They are regarded as the "eyes of Tūtira". There are numerous sites of significance around the lakes (Deed of Settlement).

Papakiri Stream

19. The inlet to Lake Tūtira is Papakiri Stream (or Sandy Creek) and is also integral to the distinct identity and mana of the Hapū. Its importance is due to its connection with Lake Tūtira and its reputation as an outstanding mahinga kai site.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

20. It is said that in ancient times there was a very large wetland area comprising several hundred acres at the northern end of Lake Tūtira, and that the Papakiri Stream never flowed directly into the lake. Instead, the waters of the Papakiri Stream worked their way through the wetland, and then into the Mahiaruhe Stream (the outlet flowing from the lake).

Aropaoanui River/Waikoau River

21. The Aropaoanui River/Waikoau River originates at the tihi tapu (scared peaks) of the central area of Maungaharuru, flowing through the Waikoau Conservation Area, joining the Mahiaruhe Stream at Lake Tūtira. From here it enters into the Aropaoanui valley where it is known as the Aropaoanui River.

22. Aropaoanui River/Waikoau River is one of the most significant awa in the taikiwā (traditional area of the Hapū). It links two of the most culturally and historically important areas of the Hapū, being Tūtira and Aropaoanui.

23. Ngāti Pāhauwera also have a connection with the river and the Aropaoanui River Valley was an area of traditional residence. Aropaoanui is where Ngāti Pāhauwera have always gone for kaimoana, with the traditional shellfish gathering area for Ngāti Pāhauwera located here.

Project Te Waiu o Tūtira

24. Lake Tūtira has had ongoing water quality issues for a long time. It has been likened to a stagnant sink of water, collecting a century of sediment and nutrients from surrounding farmland. Over the years, the lake has been the scene of mass fish deaths and multiple algal blooms.

25. Project Te Waiu o Tūtira (the milk of Tūtira) aims to improve water quality and ecological habitat in Lakes Waikōpiro and Tūtira. The project has been formed out of a partnership between Maungaharuru-Tangitū Trust, Hawke's Bay Regional Council, Ministry for the Environment and Tūtira local residents. The total cost of the project is expected to be $3.5m over five years.

26. Outcomes for the project include a community-driven Integrated Catchment Management Plan for Tūtira and cultural monitoring programme.

Spiritual Values

27. Ngāti Kurumōkihi carried out ceremonies and rituals at designated places at Tūtira, such as tohi (baptisms).

28. Tihi tapu (the sacred peak) of Te Puku is located at the southern end of Lake Waikōpiro.

29. The Aropaoanui River originates at the tihi tapu (scared peaks) of the central area of Maungaharuru.

30. In the northern edge of Lake Tūtira, lies the log Te Rewa-a-Hinetu, endowed with the power of moving from spot to spot. Its approach to Tautenga, a rock, was a particularly bad omen, and would signal a death in the Hapū.

31. Waikoau, the great grandson of Tauira and Mateawha occupied Te Onepu pā on the Waikoau/Aropaoanui River. He appears from time to time at the edges of the bush in the Waikoau area as a fully tattooed warrior.

32. A rock named Hinepare, is located at the mouth of the Waikoau/Aropaoanui River.

33. Uwha, a Hapū kaitiaki continues to guard the Waikoau/Aropaoanui River.

Acknowledged in korero tuku iho, pepeha, whakatauki, waiata

34. Lake Tūtira was also the inspiration of late Wi Te Tau Huata when composing the now famous waiata "Tūtira mai ngā iwi".

Wāhi tapu, wāhi taonga, wai tapu

35. There is evidence of wāhi tapu sites near Aropaoanui which have been registered as historic places. There are also urupā in the area.

Mahinga kai

36. The Hapū have a whakatauākī (tribal proverb) about the lake being: "ko te waiū o ō tātau tīpuna" – "the milk of our ancestors". This whakatauākī references abundance of kai that could be sourced from the lake and the lake providing spiritual sustenance.

37. There was an abundance of resource in and around Lake Tūtira, with some rongoā (medicinal plants), only found in or around Lake Tūtira. For example, particular harakeke (flax) was used in pre and post birthing of children, and cleansing the blood. Harakeke (flax) was renowned for its strength and was traded with whalers. It was very good for weaving whāriki (mats) and korowai (cloaks). The area was a significant mahinga kai site, particularly noted for the best flavoured tuna (Deed of Settlement).

38. The flax swamps at the north end of the lake were a particularly valued resource. The Papakiri Stream drained into the swamp and terminated in 'a string of deep blind holes. The lake's outlet, the Tūtira Stream, run this swamp from Whakarongotuna and was an important source of tuna. Between the lake and the ancient ford at Maheawha, where the stream is now crossed by the main highway, 19 pā tuna (eel weirs) were recorded, and a wharetuna (a permanent eel trap that required no watching, no baiting, and no lifting) was located at Maheawha (Wai 201 Report).

39. Papakiri Stream also has a reputation as an outstanding mahinga kai.

40. The alluvial soils near the Waikoau/Aropaoanui River mouth were easy to cultivate and cultivations covered the valley.

Pā, Kāinga, ara

41. The Tūtira lakes waterways and adjoining lands formed the central hub of a series of well-known and used tracks linking the Hapū with Tangitū and Maungaharuru.

42. Prior to the 1931 Napier earthquake, the Waikoau/Aropaoanui River was very deep and was used as a means of transport for waka. In later times, the awa was used for commercial purposes to transport bales of wool from the interior to the coastline.

43. Major areas of occupation included the pā of Te Rewa-o-Hinetu, Oporae and Tauranga-kōau.

44. Te Rewa-o-Hinetu pā, is located between Lake Tūtira and Lake Waikōpiro. It was a large and fortified spur which almost completely separated Lakes Tūtira and Lake Waikōpiro.

45. Oporae was a small peninsula on the eastern edge of lake.

46. Tauranga-kōau was an island pā off the east shore.

47. Waikoau, the great grandson of Tauira and Mateawha occupied Te Onepu pā on the Waikoau/Aropaoanui River.

48. Looking from Aropaoanui towards the east to the very top of the hill, on the other side of the river, are visible remains of many terraces.

Conflict

49. As a prized taonga, many raids were made on Lake Tūtira. However, Ngāti Kurumōkihi have another whakatauākī, "Tūtira upoko pipi" – "Tūtira, the place where heads became soft", commemorating the success of Ngāti Kurumōkihi in defending Tūtira, their prized taonga. Tribal archives record that, other than the death of Tiwaewae, no other rangatira (chief) were ever taken and every raiding party was beaten (Deed of Settlement).

50. The rivers feature in many kōrero (stories) of Ngāti Kurumōkihi, including a kōrero relating to the defeat of a chief from another district. The name of this battle was Wai-kōau, the waters of the shag.

51. The pā on Tauranga-Kōau was the site of an attack by Te Urewera, who besieged the pā on rafts (mokihi), and from this incident Ngāi Tatara became known as Ngāti Kurumōkihi (those attacked by rafts).

Archaeology

52. The archaeological sites located in close proximity to Lake Tūtira, Papakiri Stream and Aropaoanui River are shown in Figures 3, 4 and 5, below.

Figure 3: Archaeological sites in close proximity to Lake Tūtira

Figure 4: Archaeological sites in close proximity to Aropaoanui River (upper)

Figure 5: Archaeological sites in close proximity to Aropaoanui River (lower)

Statutory Acknowledgement Area of Interest

53. Maungaharuru-Tangitū Area of Interest and Ngāti Pāhauwera Area of Interest, can be seen in Figures 6 and 7, respectively.

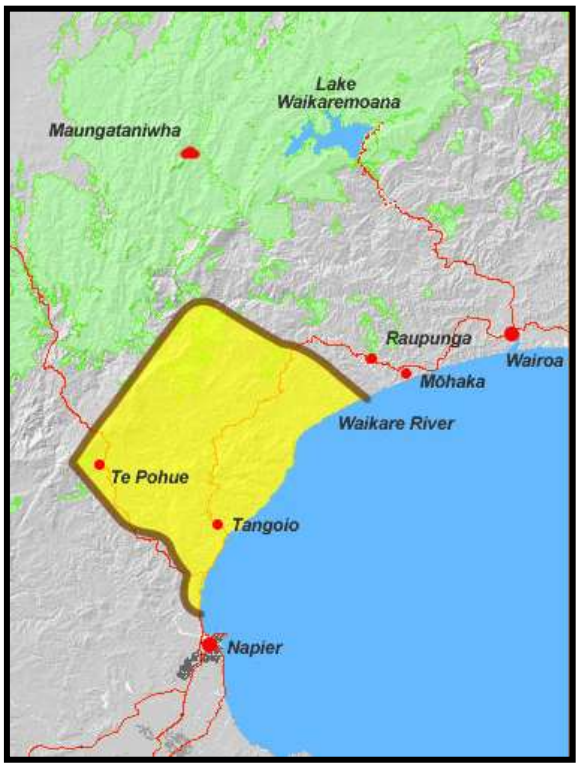


Figure 6: Maungaharuru-Tangitū Areas of Interest

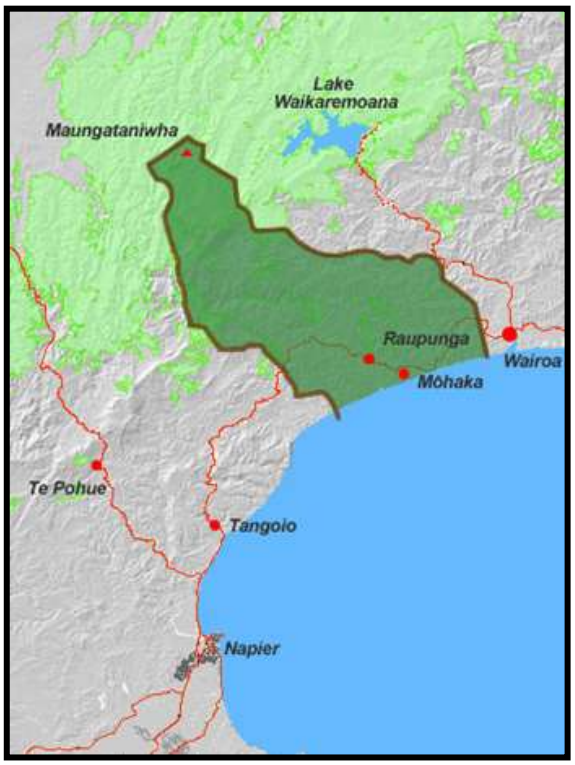


Figure 7: Ngāti Pāhauwera Area of Interest

Resource Management Plans

54. The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to Lake Tūtira. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Iwi and Hapū Resource Management Plans
Kahungunu ki Uta, Kahungunu ki Tai: Marine & Freshwater Fisheries Strategic Plan

Regional Resource Management Plan
Specific water quality standards apply to Aropaoanui River • 200 Faecal Coliforms (cfu/100ml) • 50 Suspended Solids (mg/l)
Catchments Sensitive to Animal Effluent Discharges (Schedule 6b) – Lake Tūtira
Rivers Considered for Riparian Protection (Schedule 8) – Aropaoanui River

Hastings District Plan
Appendix 50: Waahi Tapu Sites

Figure 8: Waahi Tapu Sites in Hastings District Plan – Lake Tūtira

Figure 9: Waahi Tapu Sites in Hastings District Plan – Aropaoanui River

Lake Waikareiti

Key Cultural Values
Spiritual Values
Mahinga kai, Pā tuna
Pā, Kāinga

Table 1: List of documents reviewed

Year	Name	Author
1999	Rangahaua Whanui District 4: Te Urewera, Waitangi Tribunal Rangahaua Whanui Series	Anita Miles
2001	Lake Waikaremoana and District Scoping Report	Waitangi Tribunal
2009	Wai 894: Te Urewera Waitangi Tribunal Report	Waitangi Tribunal
2010	Wai 894: Te Urewera Pre-publication, Part 2	Waitangi Tribunal
2011	Ngai Tāmanuhiri Deed of Settlement documents	Ngai Tāmanuhiri and the Crown
2013	Tūhoe Deed of Settlement documents	Tūhoe and the Crown
2014	Waikaremoana Power Scheme: Environmental Report	Genesis Energy
2015	Wai 894: Te Urewera Pre-publication, Part 6	Waitangi Tribunal
2016	Iwi and hapū of Te Rohe o Te Wairoa Deed of settlement + documents schedule	Iwi and Hapū of Te Rohe o Te Wairoa and the Crown.
2018	http://www.ngaituhoe.iwi.nz/te-urewera-management	Tūhoe

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with Lake Waikareiti are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the cultural values attributed to Lake Waikareiti in those documents referred to in Table 1, above. For clarification, Lake Waikareiti has been identified as potentially outstanding for the cultural value set only. In accordance with decisions made by the RPC in May 2018, this report does not discuss the recreation, landscape and ecology values associated with Lake Waikareiti.
3. The report summarises the values into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all water bodies are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.
4. Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Overview

5. Lake Waikareiti is a taonga of Tūhoe, Ngāti Ruapani and Ngāti Kahungunu.
6. The cultural values and associations for Lake Waikareiti are closely linked to those of Lake Waikaremoana. Both were important seasonal food sources and strategic locations in the relationships between Tūhoe, Ngāti Ruapani and Ngāti Kahungunu.
7. In 1954, the catchment areas of Lake Waikaremoana, Lake Waikareiti and other Crown reserves were gazetted as a national park. The lake bed and Māori enclaves were not included in the park gazetting.
8. Recently, Te Urewera ceased to be a national park and is vested in itself as its own legal identity. The purpose is to establish and preserve in perpetuity a legal identity and protected status for Te Urewera for its intrinsic worth, its distinctive natural and cultural values, the integrity of those values, and for its national importance.

Location

9. Lake Waikareiti is a smaller lake situated 4 km to the north of Lake Waikaremoana. Lake Waikareiti is significantly higher than Lake Waikaremoana, with the land between them rising to 460 metres, making Lake Waikareiti the highest lake in the North Island.
10. The location and extent of Lake Waikareiti can be seen in Figures 1 and 2 below.

Figure 1: Lake Waikareiti

Figure 2: Waikareiti to the northeast of Waikaremoana

*Cultural values **

Importance

11. Lake Waikareiti is a taonga of Tūhoe, Ngāti Ruapani and Ngāti Kahungunu.

12. The cultural values and associations for Lake Waikareiti are closely linked to those of Lake Waikaremoana. Both were important seasonal food sources and strategic locations in the relationships between Tūhoe, Ngāti Ruapani and Ngāti Kahungunu. There are less specific references to Lake Waikareiti in the literature but Lake Waikaremoana and Lake Waikareiti are often mentioned together.

13. Tāngata whenua now provide a leadership role in the management of the natural resources of Lake Waikareiti. Prior to Te Urewera Act, the Lake Waikareiti area of Te Urewera National Park was identified as having some of the most important biodiversity values within the Park and is one of the highest priorities for conservation management in DOC's Central North Island Region. Tāngata whenua were undertaking field delivery of the management programmes. Tūhoe are continuing this work within the recently formed Te Urewera framework.

Spiritual Values

14. Colonies of kawau (bird/shag) at Lake Waikareiti and Lake Waikaremoana were spiritually significant to Tūhoe because of their 'guardian-like activities'.

Mahinga kai

15. Raumahehe (known as kōaro (whitebait) elsewhere), an important part of the traditional Tūhoe diet, was taken from Lake Waikareiti.

Pa, Kāinga, ara

16. The eastern Urewera contained fewer kāinga and pā but there were exceptions. Even in the harsh climate around Lake Waikareiti, communities had maintained a presence for seasonal use.

Archaeology

17. There are no recorded archaeology sites in close proximity.

Statutory Acknowledgement Area of Interest

18. Tūhoe's Area of Interest and Te Rohe o Wairoa's Area of Interest, can be seen in Figures 3 and 4, respectively.

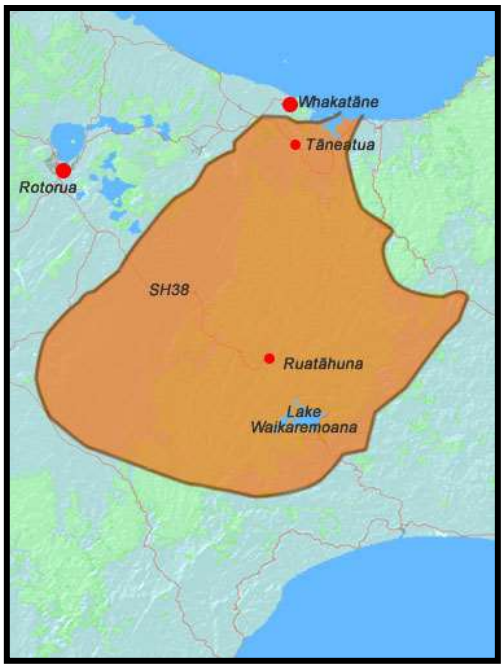


Figure 3: Tūhoe Area of Interest

Figure 4: Te Rohe o Wairoa Area of Interest

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

Resource Management Plans

19. The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to Lake Waikareiti. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Wairoa District Plan
Significant Lakes and Rivers (Schedule 5)

Lake Waikaremoana

Key Values
Cultural
Recreation (angling, boating)
Ecology (wildlife, dune vegetation)
Landscape (scenic, geological feature)

Table 1: List of publications reviewed

Year	Name	Author
1971	Lake Waikaremoana Act	New Zealand Legislation
1982	Submission on the Draft Inventory of Wild and Scenic Rivers of National Importance	Ministry of Agriculture and Fisheries
1986	A List of Rivers and Lakes Deserving Inclusion in A Schedule of Protected Waters	Grindell & Guest
2001	Lake Waikaremoana and District Scoping Report	E. Cox, Waitangi Tribunal
2004	Potential Water Bodies of National Importance	Ministry for the Environment
2004	Potential Water Bodies of National Importance for Recreation Value	Ministry for the Environment
2009	Angler Usage of Lake and River Fisheries Managed by Fish & Game New Zealand: Results from the 2007/08 National Angling Survey- NIWA	M. Unwin
2009	Wai 894 Te Urewera	Waitangi Tribunal Report
2011	East Coast Bay of Plenty Conservancy Science & Research Prospectus 2011	Department of Conservation
2011	Ngai Tāmanuhiri deed of settlement + documents schedule	Ngai Tāmanuhiri and the Crown
2012	Ngai Tāmanuhiri Statutory Acknowledgement	Ngai Tāmanuhiri
2013	Tūhoe Deed of Settlement of Historical Claims	Ngāi Tūhoe and the Crown
2013	Waikaremoana Power Stations	Engineering Heritage New Zealand
2014	Lake Waikaremoana 5 Year Monitoring Plan	Genesis Energy
2014	Lake Waikaremoana Shoreline Vegetation Monitoring 2014 – Volume 1	Wildland Consultants

2015	Waikaremoana Power Scheme: 2014/15 Environmental Report	Genesis Energy
2016	New Zealand Geo-preservation Inventory	Geological Society of New Zealand
2016	The IUCN Red List of Threatened Species	Global Species Programme, various scientists and partners worldwide
2016	Te Urewera - Lake Waikaremoana – Great Walks	Department of Conservation
2016	Iwi and Hapū of Te Rohe o Te Wairoa Deed of Settlement + Documents Schedule	Iwi and Hapū of Te Rohe o Te Wairoa and the Crown
2017	Assessment of Lakes in the Hawke's Bay Region using Lake SPI	NIWA
2017	Statement by Kaumatua at Ruapani	K. Kirikiri
2017	Waikaremoana Lakes Fishery	Fish and Game New Zealand
2018	Land Air Water Aotearoa (LAWA)	Hawke's Bay Regional Council
2018	Lake Waikaremoana Trout Fishing	NZ fishing website
2018	Eel numbers drop at Waikaremoana	Gisborne Herald
2018	Great Walks	Department of Conservation

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the values of Lake Waikaremoana are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the values attributed to Lake Waikaremoana in those documents referred to in Table 1, above. In accordance with decisions made by the RPC in June 2017, economic and consumptive use values have not been discussed in detail in this report.

Overview

3. Lake Waikaremoana is situated in *Te Urewera* surrounded by pristine native forest and spectacular mountain ridges, and is often referred to as a 'jewel in the crown' of New Zealand landscapes. The name Lake Waikaremoana means the sea of rippling waters.
4. Lake Waikaremoana has significant cultural values with many pā, urupā and wāhi tapu sites located around its edge. It was the scene of many battles. Legend tells of how Lake Waikaremoana was created. Having been turned into a taniwha, Haumapuhia, desperately tried to find an outlet to the sea before the sun rose. Her ceaseless thrashing upturned the hills and formed the various bays, inlets and features we see today.
5. The lake was formed by a massive landslide approximately 2,200 years ago which blocked a narrow gorge along the Waikaretaheke River. It is the North Island's deepest lake, reaching depths of 248 m, and Hawke's Bay's largest lake, with a surface area of around 51 km^2. The lake has exceptional water quality with a resident time of approximately 8 years.
6. Lake Waikaremoana is the primary hydro-storage lake for the Waikaremoana Power Scheme (WPS), which was commissioned in 1929. The WPS comprises three hydro power stations which generate a combined output of 138 MW. Lake levels are controlled by the WPS and in 1946 the level of Lake Waikaremoana was artificially lowered by 5 m.
7. Despite the hydroelectric generation, the Lake is highly valued for a range of recreational activities which can occur in a natural and scenic setting. The three to four day hike around Lake Waikaremoana is one of the "10 Great Walks of New Zealand", with a high number of international visitors coming to this area each year.

Location

8. Lake Waikaremoana located in the south eastern corner of *Te Urewera*, 60 km northwest of Wairoa. The location and extent of Lake Waikaremoana can be seen in Figures 1 and 2, below.

Figure 1: Location of Lake Waikaremoana

Figure 2: Extent of Lake Waikaremoana

*Cultural values **

9. Lake Waikaremoana is significant to Tūhoe, Ngāti Ruapani and Ngāti Kahungunu. The waters are regarded as a taonga. Of great importance is the ancestor Mahu-tapoa-nui. Mahu and his family are described as the discoverers and very first occupants of the land around Lake Waikaremoana.

10. It was from Mahu's daughter, Haumapuhia, that the name of the lake is derived. Haumapuhia, disobeyed Mahu when he asked his children to fetch water. As punishment she was drowned and turned into a taniwha. Her ceaseless thrashing on being turned into a taniwha on her struggles to find an outlet to the sea she upturned the hills. Her thrashing about led to the formation of the various bays, inlets and features of the present Lake, and agitated its waters – hence its name Waikaremoana (the sea of rippling waters).

11. There were numerous kāinga and cultivations around the perimeter of Lake Waikaremoana and the many pā, urupā, and wāhi tapu indicate a long history of habitation. Lake Waikaremoana traditionally supported a small population but also provided important seasonal food resources.

12. In 1954, the catchment areas of Lake Waikaremoana, Lake Waikareiti and other Crown reserves were gazetted as a national park. The lake bed and Māori enclaves were not included in the park gazetting.

13. Recently, Te Urewera ceased to be a national park and is vested in itself as its own legal identity. The purpose is to establish and preserve in perpetuity a legal identity and protected status for Te Urewera for its intrinsic worth, its distinctive natural and cultural values, the integrity of those values, and for its national importance.

14. Attachment 1 contains a more detailed explanation of the cultural values associated with Lake Waikaremoana.

Recreation values

15. Lake Waikaremoana is popular for a range of recreational activities including angling, boating and swimming. It is nationally renowned for tramping and is identified as one of the Great Walks of New Zealand which are premier tracks that pass through diverse and spectacular scenery.

16. In 2004, Lake Waikaremoana was recognised as a Potential Water Body of National Importance for recreation by the Ministry for the Environment. As part of this study, an internet survey was undertaken specifically targeting members of national recreational groups. Survey results found that Lake Waikaremoana was the third most popular water body in the country.

17. The main recreational activities which take place on Lake Waikaremoana are discussed in more detail below.

Boating

18. Lake Waikaremoana is popular for a range of boating activities such as canoeing, kayaking and yachting. There are a number of commercial operations running canoeing and kayaking trips in this area, which range from several hours to several days.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

Angling

19. The waters of Lake Waikaremoana are highly valued as a trout fishery, offering pristine lake fishing with spectacular scenery and the chance to catch trophy sized trout.
20. The lake is well stocked with both rainbow and brown trout which form two distinct fisheries. Brown trout dominate the edges of the lake and rainbow trout dominate the deeps parts, providing a range of fishing experiences which allows good fishing from the shore or on boats.
21. The clear pristine water is a key feature of Lake Waikaremoana's trout fishery, allowing anglers to stalk around the shoreline to 'spot' and 'fish' the brown trout feeding in the shallow lake margins. The surrounding hills, bluffs and native bushland provides wilderness fishing conditions highly valued by anglers.
22. The average size of brown trout in Lake Waikaremoana is 2 kg, with some reaching over 4.5 kg in size. Generally, brown trout tend to be larger than rainbow trout with the average size of rainbow trout around 1 kg, reaching a maximum of 3 kg in size.
23. The Lake Waikaremoana trout fishery was stocked with both brown and rainbow trout until 1998 when the fishery was considered to be self-sustaining. However, annually a number of tagged fish are still released into the Lake each year so Fish and Game can assess trout growth.
24. In 1982, Lake Waikaremoana was identified by the Ministry of Agriculture and Fisheries as being potentially nationally important as a salmonid fishery for both usage and fish quality.
25. In 1986, the Government released a finalised list of rivers and lakes with outstanding wild, scenic, recreational or other natural characteristics that should be protected. Lake Waikaremoana was excluded from this assessment due to its location in the Te Urewera National Park.

Tramping

26. The Lake Waikaremoana Walk is a 44 km tramping track which passes through the largest area of native forest in the North Island while providing spectacular views over the lake. The track takes three to four days to complete, attracting a high number of international visitors each year.
27. The track is classified as one of New Zealand's Great Walks with 5 huts located around the lake. There are 10 'Great Walks' in New Zealand which are premier tracks managed and maintained by the Department of Conservation. The Great Walks are scattered in the most impressive and remote natural environments across the country.
28. There is also a network of short walking tracks which range from ten minutes to ten hours at Lake Waikaremoana.

Ecology values

29. Lake Waikaremoana as an exceptional lake ecosystem which is one of the best examples of diverse aquatic vegetation in a large, deep, clear lake in the North Island.
30. The lake is presently free of the most invasive introduced aquatic pests, weeds and fish. However, the lake weed *Lagarosiphon major*, poses a major threat which has the potential to seriously compromise Lake Waikaremoana's ecological and recreational values.
31. In 2014, a weed cordon was installed at the Home Bay boat ramp to reduce the risk of aquatic weeds entering the lake at this point and spreading.

Fish

32. Recorded native fish in Lake Waikaremoana include the short finned eel, common bully, koaro and long-finned eel. The numbers of eels are currently thought to be very low. In order to increase eel numbers, an eel by-pass has been installed on the Whakamarino tip gate, which allows eels to safely migrate downstream avoiding Piripaua Power Station.
33. Up until 1998, Lake Waikaremoana was stocked with brown and rainbow trout annually by Fish and Game New Zealand. The Lake Waikaremoana trout fishery is now considered to be self-sustaining. Native smelt, not naturally present in Waikaremoana, were introduced in 1948 to provide additional food for the trout.

Wildlife

34. Mallard ducks, paradise ducks, white-faced herons and the globally endangered blue duck are all present at Lake Waikaremoana. However, population numbers are not known.

35. Both of New Zealand's rare native bat species, the long-tailed bat and short-tailed bat, are present in the wider park area.

Aquatic plants

36. Lake Waikaremoana contains one of the best examples of diverse aquatic vegetation for this type of lake in the North Island, with a total of twenty-two species of submerged plants having been recorded in the lake.

37. The lake has excellent indigenous turf communities and is considered to have similar characteristics to a pristine lake in the South Island, with its high native species diversity and little apparent impact from invasive pest plants, introduced fish, or land-use.

38. The vegetation in Lake Waikaremoana occupies an average depth range of 18 -19 m, where conditions are favourable. A well-developed low growing turf community starts above the water in places, extending to a depth of around 3 m. The most abundant species in this turf community are *Isoetes kirkii*, *Lilaeopsis ruthiana*, *Eleocharis pusilla*, *Pilularia novae-hollandiae*, and *Glossostigma diandrum*. There are signs of the invasive species Elodea (*Elodea canadensis*) in places.

39. Between 7 and 21 metres a native charophyte community exists, with *Chara australis* and *Chara globularis* forming extensive underwater meadows. The nationally rarer *Nitella opaca* is present in the charophyte community.

40. The submerged/shallow area at the lake edge, also known as the littoral zone, comprises 15% of the lake's surface area. Aquatic macrophytes are present around almost the entire perimeter of the lake and are important contributors to the primary productivity of the lake.

41. In 2017, NIWA assessed the condition of eleven lakes within the Hawke's Bay Region using the LakeSPI method. The LakeSPI (Lakes Submerged Plant Indicators) is based on a principle that the ecological condition of a particular lake in New Zealand can be characterised by the composition of submerged aquatic plants in them.

42. Using this method, NIWA found the ecological condition of Lake Waikaremoana to be in extremely good condition, with a high LakeSPI score of 74%. Lake Waikaremoana was the second highest ranked lake in the Hawke's Bay Region, second only to the Kaweka West Lake.

Invertebrates

43. The macroinvertebrate community in the lake comprises almost entirely molluscs and insects with a smaller number of oligochaetes. Koura (freshwater crayfish) are also present in the lake.

Landscape / scenic values

44. Lake Waikaremoana is a large clear sparkling blue lake set in the 225,000 hectares of *Te Urewera* which is the largest untouched native forest reserve in the North Island. Attachment 2 contains photographs of Lake Waikaremoana.

45. Lake Waikaremoana is renowned for its stunning scenery and is often referred to as 'the jewel in the crown' of New Zealand landscapes. The lake is a surrounded by the Ngamoko and Panekiri mountain ranges which contain spectacular rock bluffs and ridges and native forest that is a mix of rātā, rimu, tawa and silver beech. Panekire Bluff is a notable feature and popular walk that provides impressive views of the lake and mountains.

46. The Waikaretaheke River is the natural outlet from Lake Waikaremoana. Below the lake's outlet, the river has cut into the landslide debris creating a very steep, incised and fast-flowing river system.

47. In 1946, the lake level of Lake Waikaremoana was artificially lowered by 5 m exposing large areas of lake bed. The forest is regenerating along the shore in these areas.

48. In 2004, the Ministry for the Environment identified The Lake Waikaremoana as a Potential Water Body of National Importance for its scenic values.

Geological features

49. Lake Waikaremoana was created around 2,200 years ago when a wedge of sandstone and siltstone, believed to be nearly 8 km wide long and 4 km wide, blocked the course of the Waikaretaheke River. The lake is located 610 m above sea level, containing around 9 cubic kilometres of water to a depth about 256m.

50. In 2004, the Ministry for the Environment identified Lake Waikaremoana as a Potential Water Body of National Importance for geodiversity features.

51. The National Geo-preservation Inventory, which identifies and ranks geological features according to their relative significance, refers to Lake Waikaremoana as a very scenic lake with original vegetation and no erosion. The following features are classified as nationally and regionally significant on the inventory:

    - Feature 1: Largest debris dammed lake in the region (nationally significant)
    - Feature 2: The landslide responsible for damming the Waikaretaheke River and forming Lake Waikaremoana and the unusual caves and shelters beneath large blocks (regionally significant).

Naturalness/intactness of waterbody

52. Lake Waikaremoana is the primary hydro-storage lake for the Waikaremoana Power Scheme (WPS), which was commissioned in 1929. In 1946 the lake level was artificially lowered by 5 m which exposed large flat areas of soft delta-sediment shorelines. These areas are currently regenerating forest vegetation or are used as sites for huts, tracks, camping grounds and other tourism assets.

53. Despite this, Lake Waikaremoana is located in *Te Urewera* which is the largest untouched native forest reserve in the North Island, and the surrounding area has high natural character values.

Water Quality

54. Water quality in the lake is very good due to the largely pristine nature of the surrounding catchment are i.e. being entirely contained within *Te Urewera*. The lake is clear and blue with very low levels of nutrients and algae.

55. Water quality is monitored every 15 minutes via a remote water quality monitoring buoy on the lake. The buoy streams a range of measurements in near-real time to Hawke's Bay Regional Councils website.

56. The buoy is located south of Maurinu Point at the western end of Te Whero Bay. It provides information at different depths on oxygen, turbidity, algal concentrations, light penetration and temperature. It is also a weather station.

57. Data collected from the buoy improves understanding around the water quality dynamics in the lake, phytoplankton biomass, temperature stratification and mixing, and the potential for large flood events to impact on the lake's ecology and the quality of the trout fishery.

58. Currently Lake Waikaremoana has a trophic level of less than 2 which means the water quality is very good.

Values Summary

Overarching Value	Sub-value	Description	Outstanding Yes/no	Comments
Cultural	TBC	TBC	TBC	TBC
Recreational	TBC	TBC	TBC	TBC
Ecological	TBC	TBC	TBC	TBC
Landscape	TBC	TBC	TBC	TBC
Natural Character	TBC	TBC	TBC	TBC

Attachment 1

Lake Waikaremoana – Cultural Values Report

Key Cultural Values
Spiritual Values
Wāhi Tapu, wāhi taonga, wai tapu
Mahinga kai
Pā, Kāinga, ara
Rohe boundary

Table 1: List of documents reviewed

Year	Name	Author
1999	Rangahaua Whanui District 4: Te Urewera, Waitangi Tribunal Rangahaua Whanui Series	Anita Miles
2001	Lake Waikaremoana and District Scoping Report	Waitangi Tribunal
2009	Wai 894: Te Urewera Waitangi Tribunal Report	Waitangi Tribunal
2010	Wai 894: Te Urewera Pre-publication, Part 2	Waitangi Tribunal
2011	Ngai Tāmanuhiri Deed of Settlement documents	Ngai Tāmanuhiri and the Crown
2013	Tūhoe Deed of Settlement documents	Tūhoe and the Crown
2015	Wai 894: Te Urewera Pre-publication, Part 6	Waitangi Tribunal
2016	Iwi and hapū of Te Rohe o Te Wairoa Deed of settlement + documents schedule	Iwi and Hapū of Te Rohe o Te Wairoa and the Crown.
2018	http://www.ngaituhoe.iwi.nz/te-urewera-management	Tūhoe

1. Introduction *

Purpose

The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with Lake Waikaremoana are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

This report presents the summarised findings of the cultural values attributed to Lake Waikaremoana in those documents referred to in Table 1, above.

The report summarises the cultural values associated with Lake Waikaremoana into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all water bodies are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Importance

Lake Waikaremoana is significant to Tūhoe, Ngāti Ruapani and Ngāti Kahungunu. The waters are regarded as a taonga. Of great importance is the ancestor Mahu-tapoa-nui. Mahu and his family are described as the discoverers and very first occupants of the land around Lake Waikaremoana.

It was from Mahu's daughter, Haumapuhia, that the name of the lake is derived. Haumapuhia, disobeyed Mahu when he asked his children to fetch water. As punishment she was drowned and turned into a taniwha. Her ceaseless thrashing on being turned into a taniwha on her struggles to find an outlet to the sea she upturned the hills. Her thrashing about led to the formation of the various bays, inlets and features of the present Lake, and agitated its waters – hence its name Waikaremoana (the sea of rippling waters).

The high-born chief Ruapani is a significant tipuna who established his mana at Lake Waikaremoana after an encounter with Mahu. Although Ruapani was young, Mahu immediately acknowledged his mana, and recognised his spiritual powers. This was a significant moment in the history of the lake. (Wai 894 Report).

There were numerous kainga and cultivations around the perimeter of Lake Waikaremoana and the many pā, urupā, and wāhi tapu indicate a long history of habitation. Lake Waikaremoana supported a small population but provided important seasonal food resources (Miles).

Hydro-Power Scheme

The Waikaremoana hydro-electric power development was completed between 1929 and 1948. It consists of three power stations (Tuai, Piripaua, and Kaitawa) fed from Lake Waikaremoana.

The Waikaremoana hydro project had significant environmental and cultural impacts. The Waitangi Tribunal found that the Crown had the lake level permanently lowered without consultation, consent, or compensation, even though this had serious long term effects on fisheries and the land around the lake, and did significant spiritual damage to the people of the lake and their taonga (Wai 894 Report).

National Park

In 1954, the catchment areas of Lake Waikaremoana, Lake Waikareiti and other Crown reserves were gazetted as a national park. The lake bed and Māori enclaves were not included in the park gazetting. The Crown had leased the lake bed, which was managed by the Department of Conservation.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

Te Urewera

More recently, the Te Urewera Act replaces the Te Urewera National Parks Act for the governance and management of Te Urewera.

Te Urewera ceases to be a national park and is vested in itself as its own legal identity. Te Urewera will own itself in perpetuity with the Board to speak as its voice to provide governance and management in accordance with the principles of the Act.

The purpose of the Act is to establish and preserve in perpetuity a legal identity and protected status for Te Urewera for its intrinsic worth, its distinctive natural and cultural values, the integrity of those values, and for its national importance, and in particular to:

- Strengthen and maintain the connection between Tūhoe and Te Urewera; and
- Preserve as far as possible the natural features and beauty of Te Urewera, the integrity of its indigenous ecological systems and biodiversity, and its historical and cultural heritage; and
- Provide for Te Urewera as a place for public use and enjoyment, for recreation, learning, and spiritual reflection, and as an inspiration for all.

Te Taraipara o Waikaremoana is endorsed to represent the marae and hapū of Waikaremoana and the whānau that whakapapa to them. The current marae membership includes Waimako Marae, Te Kūhā Tārewa Marae, Te Pūtere Marae, and Te Whānau a Eria from Nātapa.

2. Spiritual Values

Lake Waikaremoana is home of the guardian spirit Haumapuhia:

Waikaremoana whanaunga kore ki runga; Kaore hoki i te roimata te pehia kei aku kamo; Me he Wai utuutu kite Wha-ngaro-manga e; Ko Haumapuhia te Tuoro e ngunguru, i raro ra e—a; I hokari nga ringa me nga waewae a Haumapuhia; katahi ka pokare nga wai, koia i kiia tona ingoa ko Waikaremoana

The sea of rippling waters that is beholden to no one is above; The tears well up in my eyes and I am unable to suppress them; Like a reservoir of water at Te Wha-ngaro-manga; Hamapuhia is the guardian spirit murmuring below Hamapuhia stretched out her arms and legs; and the waters were agitated and disturbed; that is why the name Waikaremoana was given, the sea of rippling waters.

Haumapuhia Falls to the south of the lake, previously was in the form of the taniwha that had created the lake.

Colonies of kawau at Waikareiti and Waikaremoana were spiritually significant to Tūhoe.

Nga Hoe a Kupe is one of the most significant groups of rocks adjacent to the shore.

3. Wāhi tapu, wāhi taonga, wai tapu,

There are numerous sites of waahi tapu around the lake.

Urupā are all around the lake in amongst the hills and caves.

Patekaha is tapu in that the seriously ill were sent there and it is an urupā.

4. Mahinga kai

There were many food supplies around the lake, in particular, young kawau were a customary food source.

5. Pā, Kāinga, ara

Pā and kāinga were dotted around the lake prior to it becoming a part of the National Park.

Ngāti Ruapani established settlements around the shores of Waikaremoana, over generations. Pā constructed by Ngāti Ruapani families included:

- Whakaari (to make known)
- Ma-tuahu (a place of worship)
- Te Maara-a-te-atua (the gifts of the land from God).

On the northern side of Waikaremoana there was a pā called Pukehuia.

In the 1820s, Tūhoe built a fully fortified pā on the lake at Onepoto named Te Pou o Tumatawhero, securing access to the lake from the Wairoa side.

6. Conflict

Lake Waikaremoana has been the scene of numerous battles. The history of the conquest of the Waikaremoana district mainly involved three tribes: Tūhoe, Ngāti Kahungunu, and Ngāti Ruapani. Their relationship was and is a complicated one. The status and complicated identity of Ngāti Ruapani, vis-à-vis their Tūhoe and Ngāti Kahungunu neighbours, seems to be a particularly contested issue (Waitangi Tribunal).

Around 1660 Tūhoe arrived and a number of battles occurred resulting in a number of Ngāti Ruapani chiefs being killed.

In 1823 Ngāti Ruapani were attacked on the northern shore of the lake, whereupon they fled to another fortified pā on the southern shores.

In 1824, an infamous massacre occurred at Te Ana-o-Tikitiki (a cave on the northern shore of the lake) where two Tūhoe hapū were living at the lake without defences and a great number of people were killed.

Numerous other battles occurred between Tūhoe and Ngāti Ruapani, with Ngāti Kahungunu often coming to the aid of Ngāti Ruapani. In 1826 inter-tribal peace was finally settled at the lake (Waitangi Tribunal).

In 1865 Crown forces marched on the Turanga pā at Waerenga a Hika. A group, numbering up to several hundred, escaped to Lake Waikaremoana. At least 71 of the pā's occupants were killed during the five-day siege (Ngāi Tāmanuhiri Deed of Settlement)

There were a series of engagements. The most significant, in January 1866, at Te Kopani near the southern shore of Lake Waikaremoana, involved the deaths of at least 40–50 Māori. It ranks among the most grim battles in the New Zealand Wars, involving more deaths in battle than the entire campaign against Te Kooti in Te Urewera. The Waitangi Tribunal found that the Crown was wholly at fault, attacking people who were simply retreating or defending themselves.

We cannot over-emphasise the reprehensible nature of the wholesale destruction and killing by Crown forces. Grave breaches of Treaty principle were involved in these events.

In 1870 crown forces again attacked Waikaremoana believing Te Kooti was there, and while very few were killed, they destroyed all pā, kāinga, and food supplies in the lake region (Waitangi Tribunal).

7. Rohe boundary

Intermarriage notwithstanding, it appears that Tūhoe, Ruapani, and Kahungunu have a long history of disputing the ownership of the Waikaremoana basin and, consequently, their respective tribal boundaries.

In an account detailed in the Waitangi Tribunal Rangahaua Whanui Series, the Tūhoe chief Tutakangahau stated that a boundary was laid down between Tūhoe–Ruapani and Ngāti Hinemanuhiri–Ngāti Kahungunu at Kuhatarewa and Turi o Kahu. Turi o Kahu is a hill that stands at Te Kuha Pa, Waikaremoana, while Kuhatarewa is a hill at Tahekenui, near the Waiau valley, about halfway between Lake Waikaremoana and Wairoa. These two hills, or peaks, were symbolically married to seal the peace between the warring iwi.

8. Archaeology

Figure 1: Archaeological sites around Lake Waikaremoana

9. Statutory Acknowledgement Area of Interest

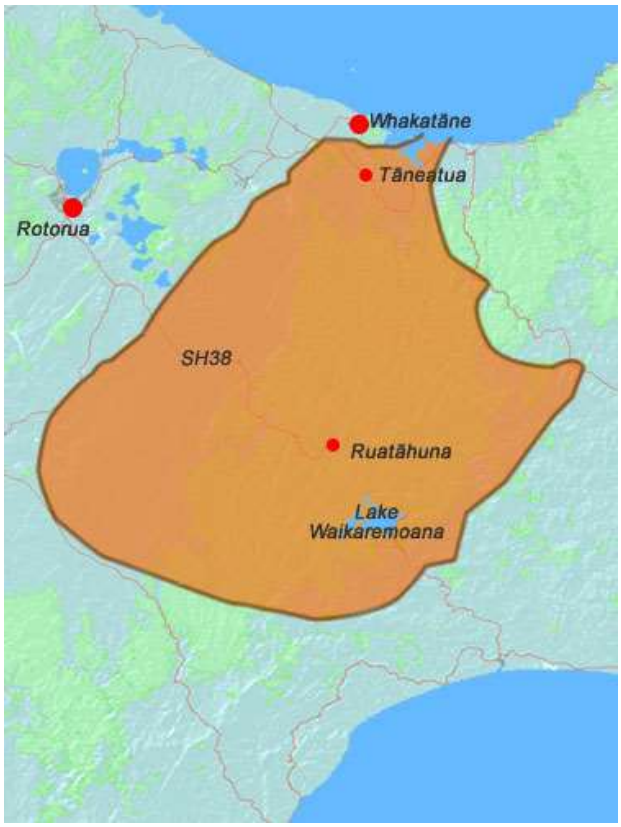


Figure 2: Tūhoe Area of Interest

Figure 3: Te Rohe o Wairoa Area of Interest

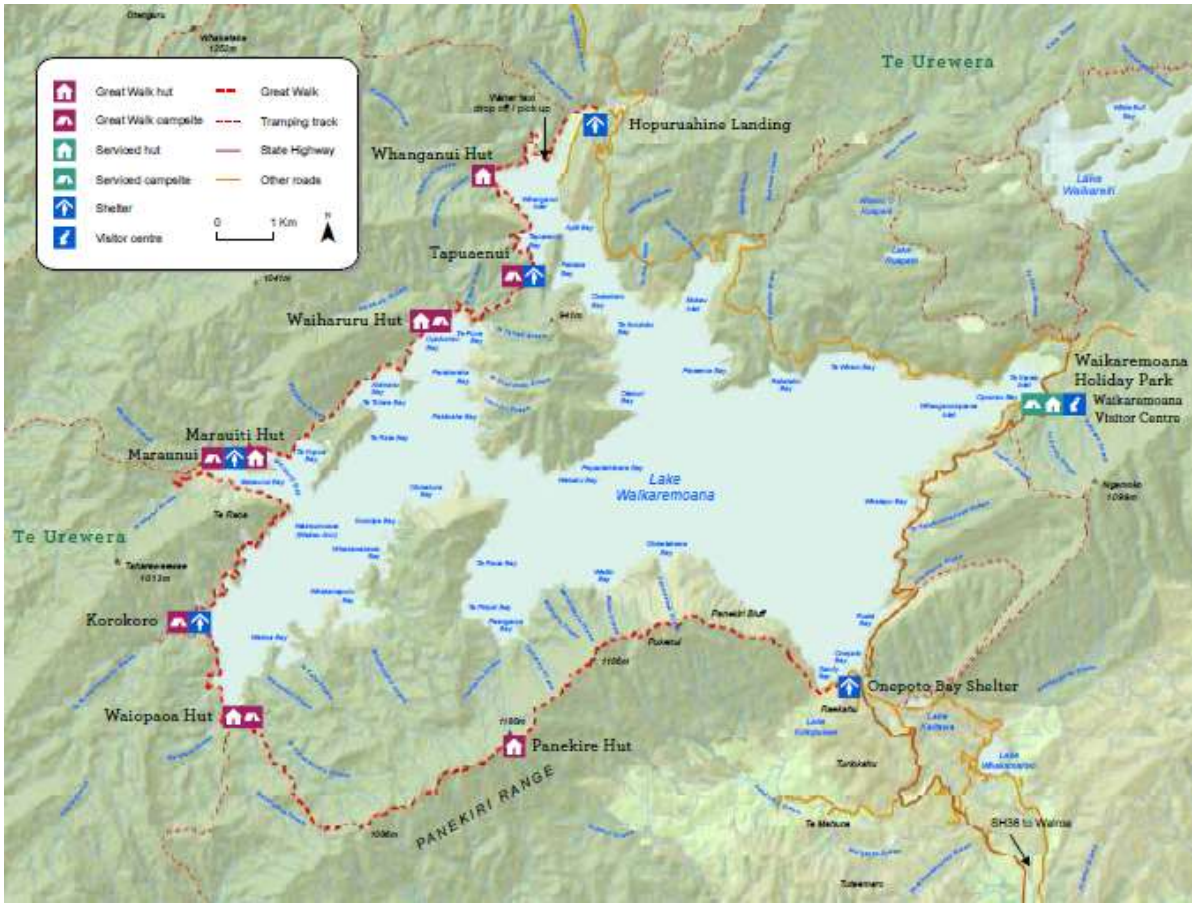
10. Resource Management Plans

The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to Lake Waikaremoana. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Iwi and Hapū Resource Management Plans
Kahungunu ki Uta, Kahungunu ki Tai: Marine & Freshwater Fisheries Strategic Plan

Wairoa District Plan
Significant Lakes and Rivers (Schedule 5)

Attachment 2: Photographs - Lake Waikaremoana


Great Walk hut
Great Walk campsite
Serviced hut
Serviced campsite
Shelter
Visitor centre
Great Walk
Tramping track
State Highway
Other roads
0
1 Km
Te Urewera
Hopuruahine Landing
Whanganui Hut
Tapuaenui
Waiharuru Hut
Waikaremoana Holiday Park
Waikaremoana Visitor Centre
Marauiti Hut
Maraunui
Lake Waikaremoana
Te Urewera
Korokoro
Onepoto Bay Shelter
Waiopaoa Hut
Panekire Hut
PANEKIRI RANGE
SH38 to Wairoa


Lake Waikaremoana
Onepoto Siphon & Spillway
Onepoto Intake
Lake Kaitawa
Tuai Intake
KAITAWA POWER STATION
Kaitawa tipgate/spillway
Lake Waikaremoana
TUAI POWER STATION
Tuai
Lake Whakamarino
Waikaretaheke Diversion
Waikaretaheke Siphon
Piripaua Intake
Whakamarino tipgate/spillway
Sluice gates
Waikaretaheke River
Mangaone Stream
KEY
Tunnels
Penstocks
Genesis Energy Power Stations
Intakes
Surge Chambers
genesis ENERGY
WAIKAREMOANA
POWER SCHEME
PIRIPAUA POWER STATION

Whakakī Lake

Key Values
Cultural
Ecology (wildlife, dune vegetation)
Landscape

Table 1: List of documents reviewed

Year	Name	Author
1986	A List of Rivers and Lakes Deserving Inclusion in A Schedule of Protected Waters	Grindell & Guest
1999	Whakakī Wetland Complex – Management Requirements to Protect and Enhance 1999- 2004	Hawke's Bay Regional Council
2001	World Wetland Day 2001: New Zealand	Ramsar.org
2002	Lake Whakakī Management Plan	Boffa Miskell for Pt. Hereheretau B2L2 Trust
2006	Areas of Significant Conservation Values: HB Coastal Marine Area (HBRC Report Number 4203 - Draft)	Hawke's Bay Regional Council
2006	A Review and Risk Assessment of Toxic Cyanobacteria in the Hawke's Bay	Cawthron Institute
2007	Whakakī Lagoon Ecological Monitoring	Hawke's Bay Regional Council
2008	To Roto O Te Whakaki – Nga Matauranga me Nga Tikanga Ecosystem Research Project	Murray Palmer
2008	Wetlands ecosystems of national importance for biodiversity: criteria, methods and candidate list of nationally important wetlands.	Landcare Research
2008	Wetland Monitoring Review	Hawke's Bay Regional Council
2011	The Whakakī Wetlands Restoration and Enhancement Project	Wairarapa Museum of Art and History
2013	Project 1116 – 2013 Trend Counts: Paradise Shelduck and Black Swan Counts for Hawke's Bay	Fish and Game New Zealand

2014	Attributes for Intermittently Open and Closed Lakes and Lagoons (ICOLLs) applicable to the National Objectives Framework for Fresh Water	Ministry for the Environment
2015	Collaborative Decision Support Framework for managing Whakakī Lake. Phase 1: Ecological Information	HBRC, Whakakī Lake Trust, DOC
2016	New Zealand Geo-preservation Inventory	Geological Society of New Zealand
2016	The IUCN Red List of Threatened Species	Global Species Programme, various scientists and partners worldwide
2016	Iwi and Hapū of Te Rohe o Te Wairoa Deed of Settlement + Documents Schedule	Iwi and Hapū of Te Rohe o Te Wairoa and the Crown
2017	Assessment of Lakes in the Hawke's Bay Region using LakeSPI	NIWA
2017	Whakakī Lake and Wairoa River	Hawke's Bay Regional Council
2017	Whakakī Lake residents invited to have a say	New Zealand Herald
2018	Summary of Cultural Values associated with Water Bodies in Hawke's Bay, Wairoa District – Whakakī Catchment (2018)	Ngāti Kirituna Hapū – Ki Whakaki Nui-a-Rua, Allen Smith, Christine Smith
2018	Government funding for Hawke's Bay forest at Whakakī Lake	New Zealand Herald
2018	Department of Conservation Website	Department of Conservation
2018	Water Quality in Whakakī Lake	Hawke's Bay Regional Council

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the values of Whakakī Lake are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the values attributed to the Whakakī Lake in those documents referred to in Table 1, above.

Overview

3. Whakakī Lake is a 400 hectare coastal lake which is separated from the sea by a narrow strip of sand dunes on its southern shore. The lake has significant wildlife values and is the largest coastal lake on the North Island's east coast. The lake has an additional 200 hectares of adjacent wetland margin comprising sand dunes and swamp areas.
4. Whakakī Lake is an intermittently closed and open lake (ICOLL) which is a rare habitat type both in New Zealand and internationally. The wetland complex supports 46 species of waterbirds, including the New Zealand Dabchick, an uncommon endemic, and the globally endangered Australasian Bittern. Both shortfin and longfin eel are found in the Lake. During the months of May and June the area is highly valued for duck hunting/shooting.
5. Historically, Whakakī Lake was part of a much larger 6,000 hectare continuous wetland area that ran for 32 km between the Wairoa and Nuhaka River mouths. However, due to significant historical modifications through burning, clearance and drainage only 10% of the original wetland area remains. The remaining wetland area is in a degraded state and frequent algae blooms occur on the lakes surface.
6. Whakakī Lake is listed as a priority wetland in the Hawke's Bay Regional Resource Management Plan, and is identified as a 'significant lake' in the Wairoa District Plan. In 2001, the Environment Minister presented the Whakakī Lake Trustees with the New Zealand Wetland Award for their important contribution towards protecting and restoring our environment.
7. Whakakī Lake has been identified as one of the six environmental hotspots by Hawke's Bay Regional Council, and funding has been allocated towards improving the area. Recently the Government announced $100,000 funding to assist with planting in the area as part of the Tuawhenua Provincial Growth Fund.

8. In total, $580,000 is planned to be invested to establish a mānuka plantation over the next five years on 80 hectares of retired land next to the Lake. The plantation will comprise 88,880 mānuka trees at Whakakī Lake to support a re-circulating wetland to filter water. This project is in its initial stages and funding is expected to be granted late 2018.

Location

9. Whakakī Lake is situated in northern Hawke's Bay around 10 km Wairoa township, adjacent to State Highway 2. The lake is part of a much larger wetland complex which includes the Ngamotu lagoon, Ohuia Lagoon, Waihoratuna Lagoon, Wairau Lagoon, Te Paeroa Lagoon, Rahui Channel, and Patangata Lagoon.

10. Figure 1 shows the location and extent of Whakakī Lake and the other lagoons which are part of the larger wetland complex. Ngamotu lagoon is not identified by name on the location map, but is located to the east of the Wairoa River mouth.

Figure 1: location of Lake Whakakī

*Cultural values **

11. Te Whakakī Lagoon is significant to the iwi and hapū of Te Rohe o Te Wairoa. Ngāti Kahukura, Ngāti Kirituna and hapū of Te Whakaki Nui-a-Rua have cultural associations with the lake.

12. The area was important mahinga kai for local Māori and had a rich variety of food, including tuna and shellfish. Many birds harvested for food at the lake and also made their home there.

13. The importance of Lake Whakakī to tāngata whenua continues today. There is a high abundance of short-finned eel, which has been linked to the customary harvesting practices of tāngata whenua.

14. The Whakakī Lake Trust has a long history of being an active kaitiaki (guardian) of Whakakī Lake and its natural resources, particularly tuna. The Whakakī Lake Trust was established in 1969 to manage Whakakī Lake property on behalf of the Māori owners.

15. Attachment 1 contains a more detailed explanation of the cultural values associated with Whakakī Lake.

Recreation values

16. Whakakī Lake is highly valued for its gamebird hunting with no other recreational activities occurring in or around the lake area.

Gamebird hunting

17. The greater Whakakī wetland complex is a renowned area for its gamebird population with swans, ducks, geese and Pukeko seasonally hunted in the wetland area. It is the most important area for waterfowl hunting in the East Coast/Hawke's Bay area with around 1,000 game birds harvested annually.

18. In the 1950s, Black Swan numbers were around five to ten thousand. Currently, the population is estimated to be around seven hundred in the greater wetland complex area.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

19. The southern peninsula between Whakakī Lake and the Pacific Ocean is administered by the Whakakī Lake Trust (The Trust) and used for duck shooting. Shooting huts are scattered along the peninsula and within the riparian habitat along the edge of the lake. Public access to the lake is limited and hunters need to get permits directly from The Trust.

Ecology values

20. Whakakī Lake is the second largest coastal lake on the North Island's east coast. It has a total wetland area of 600 hectares and was once part of a much larger 6,000 hectare continuous wetland area that ran for 32 km between the Wairoa and Nuhaka River mouths. Despite being in a severely degraded state, it supports a large population of waterbirds and represents a large proportion of the remaining wetland habitat in Hawkes Bay.

21. Whakakī Lake is an intermittently closed and open lake (ICOLL) which is a rare habitat type both in New Zealand and internationally. The Lake is bordered by rushes, sedges and sand dunes and has a distinctive ecosystem due to the large variations in water temperature and salinity. It is one of eight notable ICOLL's on the east coast of New Zealand.

22. In the 1950s, the water level of Whakakī Lake was lowered by opening an artificial outlet channel directly through the dune system into the sea. This allowed salt water to enter the lagoon, which was previously a freshwater system, killing freshwater plants and animals and creating damaging algal blooms. It also disrupted the traditional migration paths of eels and inanga. The artificial outlet channel is now permanently closed, however from time to time the lake is still artificially opened using the traditional outlet to relieve flooding.

23. Despite significant modifications, the area is highly rated in the 'wetlands of ecological and representative importance' and the 'sites of special wildlife interest' databases held by the Department of Conservation.

24. Whakakī Lake is part of a much larger wetland complex which includes the Ngamotu, Ohuia, Waihoratuna, Wairau, Te Paeroa and Patangata Lagoons. Collectively these wetlands constitute the largest such system on the east coast of the North Island.

25. In 2006, the Whakakī Lake was included on a candidate list of nationally important wetlands by Landcare Research who were undertaking work on behalf of the Department of Conservation.

Fish

26. Seven species of fish (six native) have been recorded in the lake. The most numerous species is the shortfin eel, followed by the common bully, goldfish, longfin eel, flounder, grey mullet and īnanga. The lake supports a healthy population of shortfin eel.

Wildlife

27. The greater Whakakī wetland complex is recognised as an important wildlife habitat due to the presence of significant populations of threatened waterbirds and its large waterfowl population. The area is highly ranked as a Site of Special Wildlife Interest (SSWI).

28. Forty six species of waterbirds have been recorded in this area including several rare and iconic species. The lake supports a large population of native waterbirds, including the native Australasian bittern, which is globally endangered, the New Zealand dabchick (grebe), an uncommon endemic which is near threatened globally, and the endemic Wrybill.

29. Migratory species previously recorded in the area include the white heron, golden plover, eastern bar tailed godwit, and several sandpiper species. Waterfowl include grey teal ducks, shoveler ducks, Canada goose and the black swan. The wetland also supports three native wetland birds being the Spotless Crake, Fernbird and Banded Rail who are common nationally, but very rare in Hawke's Bay.

30. Black swan and paradise shelduck counts have been carried out by Fish and Game since the early 1990s. Results show that both Shelduck and Black Swan numbers have significantly reduced at Whakakī Lake in the last 20 years. In the 1990s around 2000 black swans were counted on the lake, compared with 23 black swans counted on the lake in 2012. Similarly, in 2003 over 1200 shelducks were counted on the lake compared to 71 shelducks recorded in 2012.

31. Eighteen other species of land birds have been recorded at the lagoon in the past, including the Pipit, Rironiro, Fantail and Silvereye who are common natives, whilst the remainder are common introduced species in Hawke's Bay.

32. In 1986, the Department of Conservation rated Whakakī lagoon as a nationally significant wildlife habitat in the Wetlands of Ecological and Regional Importance (WERI) database.

33. In 1986, Whakakī Lake was placed in 'Group one[1]' in the Government's list of rivers and lakes deserving protection, for its outstanding wildlife habitat and it's in season duck shooting.

Reptiles and amphibians

34. Common skinks have been seen among dune vegetation, and frogs have been previously heard, but not sighted, on the south-western shore of the lagoon. The frogs are thought to be the southern bell frog, native to Australia and reasonably widespread in New Zealand.

35. Frogs have rapidly declined recently in New Zealand through fungal disease. As such, the presence of frogs in this wetland is viewed as positive, particularly given they do not significantly impact on the natural ecology of the area.

Dune vegetation

36. The dune plant communities surrounding Whakakī Lake are regarded as regionally significant. This is based on the relatively unmodified nature of the dune system, the absence of marram and the presence of a relatively diverse native flora, including species such as coastal scabweed, and the native sand binders spinifex and pingao. To date, no rare native plants have been recorded at Whakakī Lake.

37. The colony of mat daisy (*Raoulia* aff*. hookeri*) is the most note-worthy plant species present in the dune system, forming large cushion fields between the lagoon and the sea and in the sand hollows behind the beach. The mat daisy is a large thriving population at the northern end of the geographical range of this species and is classified as nationally threatened.

Aquatic plants

38. Historically, Whakakī Lake has contained significant beds of native aquatic macrophytic plants and fringes of primarily native vegetation, including saltmarsh ribbonwood, rushes, sedges and wetland turfs. Currently there are no submerged plants.

39. The exclusion of stock from the majority of the wetland edges will allow the turf communities to re-establish and the restoration efforts through native planting and pest control will enable the wetland to be restored to a more natural state in the future.

40. In 2017, NIWA assessed the condition of eleven lakes within the Hawke's Bay Region using the LakeSPI method. The LakeSPI (Lakes Submerged Plant Indicators) is based on a principle that the ecological condition of a particular lake in New Zealand can be characterised by the composition of submerged aquatic plants in them.

41. The LakeSPI monitoring results show that Whakakī Lake is in a degraded state with no submerged plants. Historical sampling shows a decline in submerged vegetation in the lagoon over the last 24 years, with submerged vegetation halving from 88% in 1992 to 35% in 2007, with no submerged plants recorded in 2016.

Invertebrates

42. Aquatic macroinvertebrates occupy a key place in aquatic ecosystem functioning and provide a useful measure of water quality and habitat condition.

43. In 2007, monitoring results indicated Whakakī Lake could support a considerable diversity of small animal life however, the water quality is compromised by the input of sediment and artificial nutrients. Sampling results show the lake sediments consist of firm sand and mud with some fibrous/woody organic matter on top near the lake margin.

[1] Group One = Excellent rivers or lakes containing an outstanding cultural, fisheries, wild flora, location, recreation, scenic, scientific, tourism, wildlife habitat, value(s). Group One contains the very best examples of these values.

44. No freshwater mussels were observed during the 2017 aquatic plant survey undertaken by NIWA at Whakakī Lake.

Dune Invertebrates

45. The small native fauna of the dune/bar system is distinctive and ecologically unique to Whakakī Lagoon. This fauna includes lizards (skinks and geckos) and invertebrates such as sand scarab, giant earwig and katipo, mostly associated with the spinifex, mat daisy and extensive strand zone of storm-tossed driftwood.

46. Sampling to date suggests that populations of these native animals are currently small and at risk.

Other Wetland areas – Ngamotu, Ohuia, Waihoratuna, Wairau, Te Paeroa, Patangata Lagoons

47. Whakakī Lake is part of a much larger wetland complex which includes the Ngamotu lagoon, Ohuia Lagoon, Waihoratuna Lagoon, Wairau Lagoon, Te Paeroa Lagoon, Rahui Channel, and Patangata Lagoon. These wetlands are briefly described in Table 2 below:

Table 2: Wetlands in the greater Whakakī wetland complex

Name	Description
Ngamotu Lagoon	The Ngamotu Lagoon is a Government Purpose Administration Reserve and gazetted Wildlife Management Reserve. It is a saline lagoon with saltmarsh communities. Waterfowl and waders are present. It has high botanical values and contains some of the few representative examples of estuarine vegetation found within the Waihua Ecological District, including populations of two species, Mimulus repens and Spergularia media, that are of botanical interest The Lagoon has a Moderate/High 'sites of special wildlife interest' rating on the DOC database.
Ohuia & Waihoratuna Lagoons	The Ohuia & Waihoratuna Lagoons share an outlet to the sea and are locally known as Ohuia Lake, or Big and Little Ohuia. The Ohuia Lagoon previously drained to the north and east into Lake Whakakī, however the water now passes through an artificial structure to the southern end of the Waihoratuna lagoon and out to sea. The purpose of Ohuia Lagoon is to store water drained from surrounding farmland under the Ohuia Drainage Scheme. The margins of the lagoon are grazed and predominantly grass. The Waihoratuna Lagoon is the western most of the two lagoons and the outlet of the Waiatai Stream. The Waiatai Stream originally flowed directly into Lake Whakakī. The margins of the lagoon have a good variety of native wetland plants. Waihoratuna Lagoon is approximately 10 ha in size, increasing up to 30 ha or more after heavy rain. The Lagoon has significant siltation due to farming upstream and erosion of the hills in Waiatai Valley.
Wairau Lagoon	The Wairau Lagoon is approximately 35 hectares in size. The Lagoon has a 'moderate' rating on the DOC database for 'sites of special wildlife interest'. The area is protected by an Open Space Covenant under the Queen Elizabeth II Trust. The lagoon is fully fenced and used by a wide variety of birds, particularly waterfowl.
Te Paeroa Lagoon (Korito)	Te Paeroa Lagoon is a shallow basin with a limited catchment area covering approximately 105 ha, including the swamp margin. The lagoon with used by a variety of water fowl species, however is of limited value for breeding due to the lack of marginal vegetation. Te Paeroa Lagoon has a Moderate/High 'sites of special wildlife interest' rating in the DOC database. In 1997/98 the swamp completely dried up depleting most of the native vegetation.
Rahui Channel	In 1997 enhancement works undertaken at Lake Whakakī included the re-opening of the Rahui Channel. The area seaward end of the Rahui Channel is a low lying swamp land and important for waterfowl and eel harvesting. The Rahui Channel is subject to regular drain clearance.
Patangata Lagoon	Pantangata Lagoon is a low shallow water filled depression covering approximately 10 ha. At times of low water, the lagoon is separated from the Rahui channel at the western end. The lagoon is the remnant waterbody of the original channel carrying Lake Whakakī to its historical outlet at the Opoho Stream. The area is extremely valuable for wildlife as a loafing, feeding and breeding area. A mixture of exotic and native plant species are present and a good range of aquatic plants are found near the margins.

Landscape / scenic values

48. Lake Whakakī is a shallow wetland system with a total area of around 600 hectares of combined lake, sand dune and swamp areas. The wetland system is separated from the sea by thin sand dunes on the southern shore, with State Highway 2 and the Napier-Gisborne railway line bordering it to the north.

49. Whakakī Lake is part of a bigger wetland complex which includes the Ngamotu, Ohuia, Waihoratuna, Wairau, Te Paeroa, and Patangata lagoons. Collectively these wetlands are considered to be the best representative example of this coastal landscape type in the Hawke's Bay.

50. Photographs of Whakakī Lake are contained in Attachment 2.

Geological features

51. Whakakī Lake is a coastal lagoon which was created by the formation of a shingle bar which over time grew eastward and more impervious to water seepage, eventually cutting off the lagoon's inlet from the sea. This process, combined with its extended outlet, resulted in the Whakakī Lagoon becoming a freshwater lake with saline sea water no longer able to enter through the lagoons inlet.

52. Whakakī Lake is unique in that the natural drainage and seaward opening has been moved eastwards along the beach by longshore drift. This is different from most other coastal lagoons in New Zealand.

53. The National Geo-preservation Inventory, which identifies and ranks geological features according to their relative significance, classifies the Whakakī Lagoons as regionally significant, specifically recognising that these five well-defined coastal lagoons are the best in Hawke's Bay.

Naturalness/intactness of waterbody

54. Whakakī Lake is the last significant wetland of a much larger 6,000 hectare wetland landscape. The lake has undergone significant historical modifications through burning, clearance and drainage and only 10% of the original wetland remains.

55. During the 1950s an artificial outlet channel was installed through the dune system emptying almost the entire lake volume, transforming the lake ecology. The artificial outlet channel is no longer used.

Water Quality

56. The amount of sediment coming into Whakakī Lake after rain events can be significant. This brings unwanted nutrients and sediments into the lake impacting on its water quality.

57. In 2016, blue green algae dominated the lake, which is potentially toxic to animals and is detrimental to the lake's ecosystem. In March 2018 the abundance of cyanobacteria in the lake was 50 times higher than the limit considered safe for contact recreation.

58. Hawke's Bay Regional Council regularly carries out water sampling at three locations around Whakakī Lake. Currently, none of the sites meet the guideline values for faecal coliforms and recreational use.

59. In 2017, NIWA assessed the condition of Whakakī Lake. Sampling results showed that the water quality of Whakakī Lake has deteriorated to the point where growth of submerged plants can no longer be supported. Whakakī Lake's ecological state is among the worst of all monitored lakes in New Zealand.

Values Summary

Overarching Value	Sub-value	Description	Outstanding Yes/no	Comments
Cultural	TBC	TBC	TBC	TBC
Recreational	TBC	TBC	TBC	TBC
Ecological	TBC	TBC	TBC	TBC
Landscape	TBC	TBC	TBC	TBC
Natural Character	TBC	TBC	TBC	TBC

Attachment 1

Whakakī Lake – Cultural Values Report

Key Cultural Values
Mahinga kai, Pā tuna
Pā, Kāinga

Table 1: List of documents reviewed

Year	Name	Author
1998	THE LAND AND THE BLACKBERRY: Aspects of the History of the Hereheretau and Kahaatureia Blocks with special reference to Hereheretau Station and the Maori Soldiers' Fund	Katherine Orr-Nimmo
2008	Te Roto o te Whakakī: Nga Matauranga me Nga Tikanga Ecosystem Research Project	The Whakakī Lake Trust and Nga Mahi te Taio Consultants
2011	Kōtuitui: New Zealand Journal of Social Sciences Online - The dynamics of hapū research relationships	Margaret Forster
2016	Iwi and hapū of Te Rohe o Te Wairoa Deed of settlement + documents schedule	Iwi and Hapū of Te Rohe o Te Wairoa and the Crown.
2017	Whakakī Info Sheet	Hawke's Bay Regional Council
2017	Press Release: Whakakī Lake opening and weir plan	Hawke's Bay Regional Council

1. Introduction *

Purpose

The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the Whakakī Lake are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

This report presents the summarised findings of the cultural values attributed to Whakakī Lake in those documents referred to in Table 1, above.

The report summarises the cultural values associated with Whakakī Lake into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all water bodies are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Importance

Te Whakakī Lagoon is of spiritual and cultural significance to Ngāti Kahukura, Ngāti Kirituna and hapū of Te Whakakī Nui-a-Rua.

Successive generations were dependent on the lake and associated natural resources for survival. Over time the lake became a central feature of local hapū identity, highly valued, respected and admired. When the various blocks were before the Native Land Court, local Māori described the land in an enormous wealth of detail. They mentioned numerous features, from eel weirs to karaka trees to clearings.

Whakakī Lake Trust

The Whakakī Lake Trust has a long history of being an active kaitiaki (guardian) of Whakakī Lake and its natural resources, particularly tuna. The Whakakī Lake Trust was established in 1969 to manage Whakakī Lake property on behalf of the Māori owners.

The bed of the Whakakī Lake and some of the immediately adjacent lands are Māori owned. A substantial part of the bed, and lake property from the eastern end towards the west is part of the Hereheretau B2L2 block and managed by the Whakakī Lake Trust. Lands at the western end of the Lake, including the lake bed are managed by the Whakakī 2N Incorporation (Iwitea). The lake property is 577 hectares. Approximately 117 hectares are sand dunes and swamp areas with the remainder made up of the lake.

However, a decline in water quality for Whakakī Lake over recent decades has diminished mahinga kai and other cultural values. One of the main issues in 2016 was the dominance of blue green algae, which are potentially toxic and can taint fish and macroinvertebrates.

In 1996, the Whakakī Lake Trust began an ambitious and extensive hapū-based wetland restoration and enhancement programme that still continues today. Whakakī Lake Trustees are working to restore the lake by collecting information on water quality and providing insights into what needs to be done to maintain water quality and cultural values. They have planted some of the lake surrounds which is an ongoing process because of the harsh coastal conditions.

The management of the lake level has also caused concern for tāngata whenua. Lake Whakakī has been manually opened by regional authorities to relieve flooding on surrounding farmland for over 50 years. Up until the early 1900's, exit of the lagoon waters to the sea occurred only when floodwaters naturally overtopped the sandbar or tāngata whenua opened the bar manually to remove floodwaters. In 2017, HBRC and Whakakī Lake Trust met to discuss a permanent solution with the Regional Council committing to advance a plan for a permanent weir to manage the lake level.

2. Mahinga kai

The area was important mahinga kai for local Māori and had a rich variety of food, including tuna and shellfish. Many birds harvested for food also made their home there.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

The importance of Lake Whakakī to tāngata whenua continues today. In a 2008 ecological report for Whakakī Lake Trust, a high abundance of short-finned eel were noted. This abundance was linked to the customary harvesting practices of tāngata whenua:

This level of abundance, and the high ratio of female to male fish present, we believe to also be a direct outcome of the traditional harvest practices of Tāngata Whenua, their management of the fishery under a Māori Customary regime, and their ongoing restoration initiatives in terms of the Lake hydrology and its margins.

3. Conflict

Awa Wahi is the place where the Whakakī Lake was opened to delay pursuing enemies and allow the tāngata whenua to escape to Moumoukai.

4. Archaeology

Figure 1: Archaeological Sites

5. Resource Management Plans

The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to Lake Whakakī. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Regional Resource Management Plan
Known Productive Aquifer Systems immediately east of Whakakī – confined and unconfined (Schedule 4)
Catchments Sensitive to Animal Effluent Discharges (Schedule 6b)

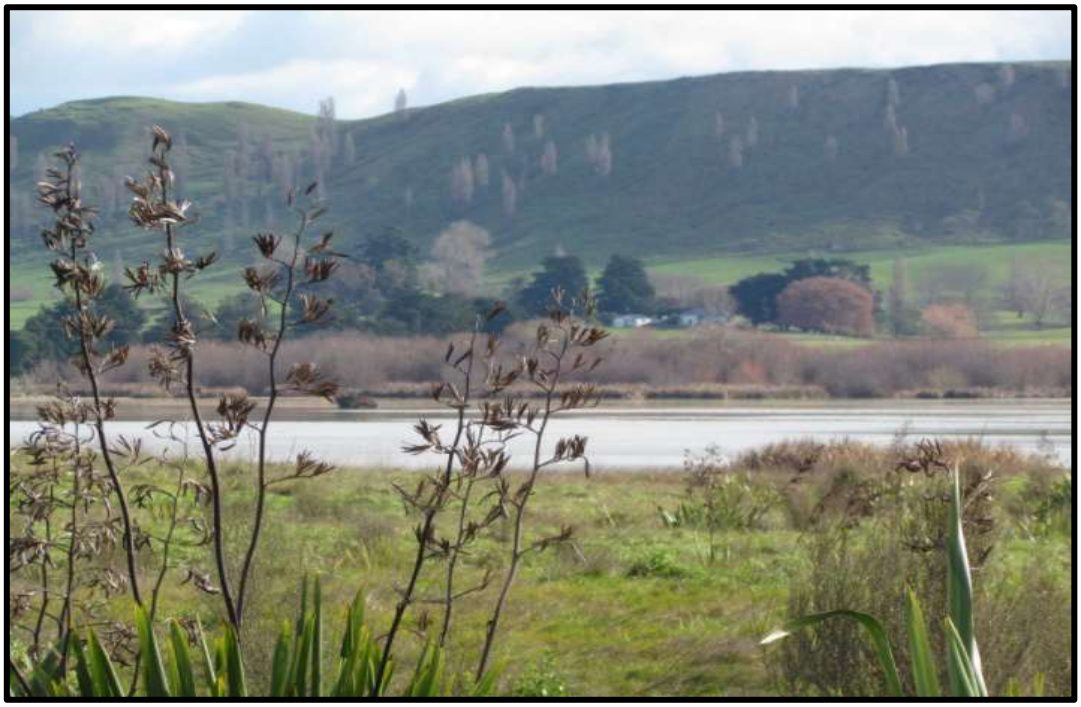
Regional Coastal Environment Plan
Within Coastal Environment Inland Boundary
Vegetation Clearance Management Area
Lake and surrounds part of Sensitive Catchment (Schedule Q)
Known Productive Aquifer Systems immediately east of Whakakī – confined and unconfined (Schedule O)

Wairoa District Plan
Significant Lakes and Rivers (Schedule 5)

Attachment 2: Photographs - Whakakī Lake


Inflow from upstream lagoons
Inflow (Waikatuku Stream)
Rahui Channel
Whakaki Lake
Sill, restricting lake water level fall when open to the sea
Current opening site and site of occasional overtopping from the sea
Previous opening site and site of occasional overtopping from sea to lake

Lake Whatumā (Lake Hatuma)



Key Values
Cultural
Ecology (wildlife, fisheries, aquatic vegetation)

Table 1: List of publications reviewed

Year	Name	Author
1986	A List of Rivers and Lakes Deserving Inclusion in A Schedule of Protected Waters	Grindell & Guest
1987	Wetlands of National Importance to Fisheries	Ministry of Agriculture & Fisheries
2000	Lake Whatumā Management Plan 1999 - 2004	Hawke's Bay Regional Council
2005	Sports Fish and Game Bird Management Plan	Fish and Game New Zealand
2006	A Review and Risk Assessment of Toxic Cyanobacteria in the Hawke's Bay	Cawthron Institute
2008	Lake Whatumā Ecological Monitoring	Hawke's Bay Regional Council
2008	Wetland Monitoring Review	Hawke's Bay Regional Council
2009	Bird Species of Concern at Wind Farms in New Zealand	Department of Conservation
2011	Lake algal bloom leads to warning	Hawke's Bay Today
2013	Close Approaches and Acoustic Triangulation: techniques for mapping the distribution of booming Australasian bittern (*Botaurus poiciloptilus*) on small wetlands	Colin O'Donnell (DOC), Emma Williams (Massey), John Cheyne (Wetland works)
2013	Australasian Bittern	New Zealand Birds Online
2013	Concise Statement of Evidence of Peter McIntosh before the Board of Inquiry Tukituki Catchment Proposal	Peter McIntosh
2014	Hawke's Bay Biodiversity Inventory – Current State of Knowledge	Hawke's Bay Regional Council
2015	Forest and Bird Magazine – Spring 2015 Issue	Forest and Bird

2016	The IUCN Red List of Threatened Species	Global Species Programme, various scientists and partners worldwide
2016	Booming Bitterns	Radio New Zealand
2016	Central Hawke's Bay: Locals help to uncover secretive bittern world	Hawke's Bay Today
2017	Assessment of Lakes in the Hawke's Bay Region using Lake SPI	NIWA
2017	Whatumā Lake and Tukituki Catchment	Hawke's Bay Regional Council
2017	Conservation Status of New Zealand Birds, 2016	Department of Conservation, Forest and Bird New Zealand
2018	Cultural Values Table	Hawke's Bay Regional Council
2018	Selected Shallow Lakes – An assessment of water quality and related values (draft)	Hawke's Bay Regional Council

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the values of Lake Whatumā are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the values attributed to Lake Whatumā in those documents referred to in Table 1, above.

Overview

3. Lake Whatumā is an oval shaped shallow lake with a surface area of 160 hectares, with an additional adjacent wetland margin of around 76 hectares, which is in a degraded state. The lake has high wildlife values and is home to the largest population of the globally endangered Australasian bittern in Hawke's Bay.
4. The lake is privately owned by a number of individuals and surrounding land uses are predominately sheep and beef farming. The lake commonly suffers water shortages in the summer which can have a detrimental effect on the lakes ecology. The lake is jointly managed by the Department of Conservation and surrounding landowners.
5. Historically, much of the surrounding/Tukituki catchment run off was stored in Lake Whatumā during periods of prolonged heavy rain. This caused extended periods of inundation of the land surrounding the lake which was problematic for surrounding landowners. Water levels are now managed artificially by a weir.
6. A number of management plans have been developed over the last 20 years aimed at the restoration and rehabilitation of the lake through plantings and raising the lake's water level. However, due to a conflict of interests, and different visions for the lake, a management plan has not been agreed on.
7. Lake Whatumā is a large shallow lake which is also a specific type of wetland area. It is one of the last few remaining wetlands of this type in Hawke's Bay. It is listed a priority wetland in the Hawke's Bay Regional Resource Management Plan, and was identified as a Recommended Area for Protection by the Department of Conservation under the Protected Natural Areas Programme.
8. In 2017, the Lake was identified as one of the six environmental hotspots by Hawkes Bay Regional Council, and funding has been allocated towards an environmental enhancement plan of action to protect Lake Whatumā.
9. During summer, when lake levels are low, Lake Whatumā suffers from algae blooms which severely affects the lake's water quality and wildlife habitats.

Location

10. Lake Whatumā is located approximately 3 km south of Waipukarau and is part of the greater Tukituki catchment area. The total catchment area for Lake Whatumā is around 5,400 hectares.

11. The location and extent of Lake Whatumā is shown in Figures 1 and 2 below.

Figure 1: Location of Tukituki Catchment

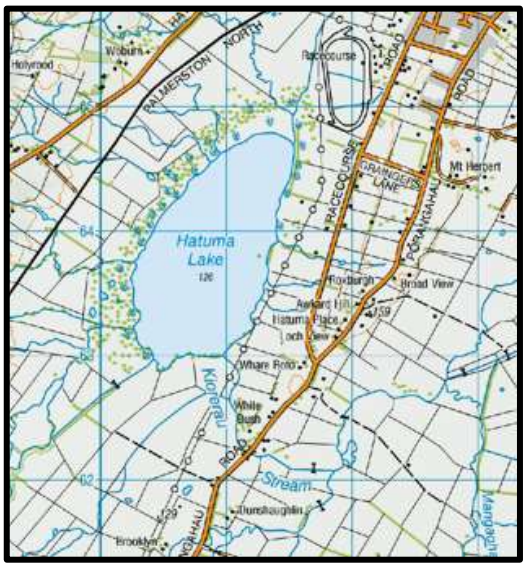


Figure 2: Extent Lake Whatumā

*Cultural values **

12. Lake Whatumā is a significant waterway for Heretaunga Tamatea. It lies at the heart of the spiritual and cultural wellbeing and identity. The lake derives its name from its use as a plentiful source of kai and is a taonga of great significance. Throughout history, many hapū utilised the lake's resources.

13. The Lake was a significant mahinga kai. It was particularly known for eels, but also other freshwater fish, freshwater mussels, birds (including kereru), and raupo pollen. Its surrounds provided toitoi, patete, koareare. Around the lake was forest known as a source of kererū. The name of the lake is said to be a reference to the lake's first discoverers eating until they were fully satisfied.

14. Up until the 1940s the hapū located at Tapairu, Whatarākai, Mataweka and Takapau undertook regular food-gathering excursions to Lake Whatumā, particularly for tuna, kōkopu, kākahi and native birds. Continued drainage and the impact of surrounding land use meant that by the 1950s, the lake had degraded as a food source.

15. Lake Whatumā was a traditional area of residence to a permanent population and was utilised by a number of surrounding hapū who travelled to the lake to gather resources on a seasonal basis. There are numerous archaeological remains indicating there was a high population in the area. The remains of several fortified pā are still in the area.

16. Attachment 1 contains a more detailed explanation of the cultural values associated with Lake Whatumā.

Recreation values

17. Lake Whatumā is highly valued for its gamebird hunting, with the lake supporting a significant population of the dabbling duck population in Hawke's Bay. A number of maimais are located in and around the lake.

18. Historically, the Lake was used for a range of recreational uses including rowing, sailing and speed boating. However due to the frequently low lake levels these activities ceased some time ago.

19. In the past, algae blooms have occurred at Lake Whatumā which severely impacts on the recreational values of the lake.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

Ecology values

20. Lake Whatumā is 236 hectares in size[1], with a maximum depth of 0.8 m, and is one of the few remaining wetlands in Hawke's Bay. The area is recognised as having high wildlife value.

21. Lake Whatumā and its surrounding wetland margin is currently in a degraded state. The lake suffers from water shortages in the summer and is prone to flooding after prolonged heavy rain. The water level of Lake Whatumā is artificially controlled via a weir.

22. In the 1990s, the Department of Conservation identified Lake Whatumā as having high ecological values and as part of its Protected Natural Areas Programme identified the lake as a 'Recommended Area for Protection'.

23. In the 1990's, Lake Whatumā was identified by DOC as one of the top eight priority wetlands and lakes in Hawke's Bay.

24. In 2017, Hawke's Bay Regional Council rated the overall ecological quality of Lake Whatumā as 'moderate'. The rating was reduced due to poor water quality and evaluated by its bird communities.

25. The ecological values associated with Lake Whatumā are discussed in more detail below.

Fish

26. Six species of fish have been recorded in the lake, including longfin eel, shortfin eel, common bully, goldfish and rainbow trout. In 2005, Lake Whatumā was identified as being regionally significant for native fish. The lake is recognised as providing a particularly important habitat for eels.

27. In 2008, fish surveying could not take place as the monitoring sites were completely dry. The status of the native fish population in Lake Whatumā is currently unknown.

Wildlife

28. Despite its degraded state, Lake Whatumā supports a wide range of water birds, holding one of the best populations of the globally endangered Australasian bittern in Hawke's Bay. The lake also supports large populations of game birds. The area is highly ranked as a Site of Special Wildlife Interest (SSWI).

29. The native Australasian bittern is extremely rare, with the total New Zealand population estimated to be between 750 and 1000. Lake Whatumā supports around 1% of the national population, and 25% of the total population in Hawke's Bay. The lake is recognised as being one of the most accessible sites to listen or watch for the Australasian bittern.

30. A total of twenty-four species of water birds have been recorded at Lake Whatumā over the last 20 years. The list includes the New Zealand dabchick, an uncommon endemic which is near threatened globally, and the Spotless Crake and Marsh Crake, two native wetland birds which are common nationally but now very rare in Hawke's Bay.

31. The lake is one of the preferred locations for the cattle egret which migrates from eastern Australia in autumn. On arrival to New Zealand, these birds feed along the western coast of New Zealand before moving on to congregate at a few favoured sites (one being Lake Whatumā), where they invariably associate with cattle herds on damp pasture.

32. Fourteen other species of land birds have been recorded at the lake in the past. Four are common natives, whilst the remainder are common introduced species in Hawke's Bay.

33. In 2005, Fish and Game New Zealand identified the Whatumā wetland as a regionally significant game bird habitat.

Reptiles and amphibians

34. In 2001 and 2003, frogs were seen fleetingly at various points around Lake Whatumā. The frogs are thought to be the southern bell frog, native to Australia and reasonably widespread in New Zealand.

[1] 160 hectares (lake surface area) + 76 hectares (wetland margin).

35. Frogs have rapidly declined recently in New Zealand through fungal disease. As such, the presence of frogs in this wetland is viewed as positive, particularly given they do not significantly impact on the natural ecology of the area.

36. In 2005 and 2008, frogs were not detected at Lake Whatumā, possibly due to water levels and the absence of suitable habitat.

Aquatic plants

37. In 2017, NIWA assessed the condition of eleven lakes within the Hawke's Bay Region using the LakeSPI method. The LakeSPI (Lakes Submerged Plant Indicators) is based on a principle that the ecological condition of a particular lake in New Zealand can be characterised by the composition of submerged aquatic plants in them.

38. The 2017 sampling results show the lake has predominantly native plants extending across the entire lake bottom. The dominance of native aquatic plants (e.g. turf species) was a good indicator of a healthy lake structure and function.

39. Notwithstanding, the shallow nature of Lake Whatumā makes it particularly vulnerable to change over a short time frame (e.g. vulnerability to drought). This combined with the low water levels which regularly occur over summer, puts Lake Whatumā's submerged native plant community at risk.

40. This is apparent from monitoring results in 2008, where the water levels in Lake Whatumā were too shallow to access using a canoe. At this time, the only submerged plants recorded were invasive plant species and a native milfoil.

Wetland plants

41. Five major vegetation types dominate the area being willows, raupo, sedges, rushes and pasture. The lake has been significantly modified with little of the original vegetation cover left. Historically, the lake would have been surrounded by tall dense forest, dominated by kahikatea on the wet soils near its shore.

42. Swamp nettle is the only known rare plant in the Lake Whatumā wetland. This endemic species is listed as nationally threatened. In 2005, swamp nettle was flourishing and widespread and considered to be one of the best populations in Hawke's Bay. However in 2008, concerns were raised about the invasive weed Beggars tick impeding the swamp nettle.

43. Vegetation maps taken in 2007 show that the raupo on the Northern and Eastern sides of the lake has expanded when compared to the 1999 imagery. However, during this same time period lake levels are significantly lower.

Macroinvertebrates

44. Aquatic macroinvertebrates occupy a key place in aquatic ecosystem functioning and provide a useful measure of water quality and habitat condition.

45. In 2008, monitoring results indicated Lake Whatumā could support a considerable diversity of small animal life, but that the water quality is compromised by artificial nutrient input.

46. In 2008, aquatic invertebrate sampling could not occur as the monitoring sites were completely dry.

Landscape / scenic values

47. Lake Whatumā is located on the southern edges of the township of Waipukarau. It is a shallow, oval-shaped, low lying lake, which is surrounded by wetland vegetation. Historically, the lake has been subject to toxic algae blooms which can make the lake unsightly and potentially unsafe. Adjoining land uses are predominately sheep and beef farming.

48. Photographs of Lake Whatumā are contained in Attachment 2.

Naturalness/intactness of waterbody

49. Lake Whatumā has undergone significant modifications and the lake levels are artificially controlled via a weir. Very little of the original vegetation remains around the lake.

Water Quality

50. The water quality data for Lake Whatumā is limited. However, reviewed information indicates that Lake Whatumā is a eutrophic lake which can experience algal blooms. Historically, elevated levels of total phosphorous and problematic cyanobacteria has been recorded at Lake Whatumā.

51. Cyanobacteria can produce toxins known as cyanotoxins. Cyanotoxins are a threat to human and animal health when consumed or through contact.

52. In 2017, NIWA assessed the ecological condition of Lake Whatumā. Sampling results showed water clarity was poor with the through-water visibility estimated by divers as only 0.2 m at the margins.

Values Summary

Overarching Value	Sub-value	Description	Outstanding Yes/no	Comments
Cultural	TBC	TBC	TBC	TBC
Recreational	TBC	TBC	TBC	TBC
Ecological	TBC	TBC	TBC	TBC
Landscape	TBC	TBC	TBC	TBC
Natural Character	TBC	TBC	TBC	TBC

Attachment 1

Lake Whatumā – Cultural Values Report

Key Cultural Values
Spiritual values
Wāhi Tapu, wāhi taonga, wai tapu
Mahinga kai, Pā tuna
Pā, Kāinga
Rohe boundary

Table 1: List of documents reviewed

Year	Name	Author
2000	Lake Whatumā Management Plan 1999 - 2004	Hawke's Bay Regional Council
2012	Tukituki River Catchment Cultural Values and Uses	Te Taiwhenua O Tamatea & Te Taiwhenua O Heretaunga for HBRC
2016	Heretaunga Tamatea deed of settlement + documents schedule (specifically statements of association)	Heretaunga Tamatea and the Crown
2018	Cultural Values Table	Hawke's Bay Regional Council

*1. Introduction **

Purpose

The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with Lake Whatumā are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

This report presents the summarised findings of the cultural values attributed to Lake Whatumā in those documents referred to in Table 1, above.

The report summarises the cultural values associated with Lake Whatumā into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all water bodies are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Importance

Lake Whatumā is a significant waterway for Heretaunga Tamatea, one of six large natural groups negotiating the settlement of Ngāti Kahungunu Treaty of Waitangi claims. It lies at the heart of the spiritual and cultural wellbeing and identity. The lake derives its name from its use as a plentiful source of kai and is a taonga of great significance.

Over time many hapū utilised the lake's resources. Tīpuna identified as having fished the lake included Toroiwaho, Te Aomataura, Rangitotohu, Te Rangitekahutia, Te Kīkiri, Parakiore, Te Hauapu, Tapuhara, Te Rangikataepa and Pareihe.

Current hapū associated with Whatumā are Ngāi Toroiwaho, Ngāti Mārau and Ngāi Tahu ki Takapau.

Ngāti Mārau has a strong affiliation with Whatumā.

The lake remained an important mahinga kai until recent times and it was said that around 900 tāngata whenua lived around the lake's edges in 1852.

2. Mahinga kai

The Lake was a significant mahinga kai site central to the welling of Heretaunga Tamatea. It was particularly known for eels, but also other freshwater fish, freshwater mussels, birds (including kereru), and raupo pollen. Its surrounds provided toitoi, patete, koareare. Around the lake was forest known as a source of kererū. The name of the lake is said to be a reference to the lake's first discoverers eating until they were fully satisfied.

It has been suggested that the settlement surrounding Waipukurau arose due to the lake and its abundant resources.

Up until the 1940s the hapū located at Tapairu, Whatarākai, Mataweka and Takapau undertook regular food-gathering excursions to Hatuma, particularly for tuna, kōkopu, kākahi and native birds. Continuing drainage and the impact of surrounding land use meant that by the 1950s, the lake had degraded as a food source.

3. Pā, Kāinga, ara

Lake Whatumā was a traditional area of residence to a permanent population and was utilised by a number of surrounding hapū who travelled to the lake to gather resources on a seasonal basis.

There are numerous remains of middens, tools, bones, pits, chisels and axes indicating there was a high population in the area.

The remains of several fortified pā are still in the area including Te Moanairokia, Ohineiwhatūīa, Pukekaihou, Waipukurau, Ruatangaroa, Kaimanaw and Kaitoroa.

4. Archaeology

Figure 1: Archaeological Sites around Lake Whatumā

5. Statutory Acknowledgement Area of Interest

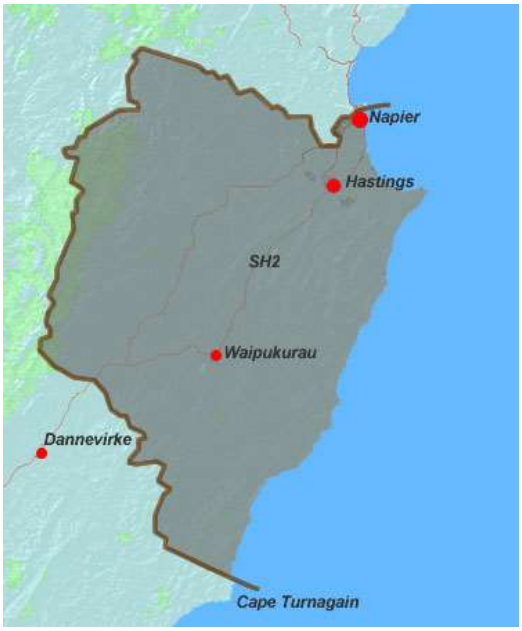


Figure 2: Heretaunga Tamatea Area of Interest

6. Resource Management Plans

The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to Lake Whatumā. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Iwi and Hapū Resource Management Plans
Kahungunu ki Uta, Kahungunu ki Tai: Marine & Freshwater Fisheries Strategic Plan
Mana Ake - An Expression of Kaitiakitanga, Te Taiwhenua o Heretaunga

Regional Resource Management Plan
Section 5.9 (Tukituki River Catchment) – various objectives, policies, limits and targets apply to water quantity and water quality
Schedule 6b: Catchments Sensitive to Animal Effluent Discharges (Schedule 6b)

Central Hawke's Bay District Plan
Appendix C – Schedule of sites of cultural significance to tangata whenua – contains archaeological sites

Attachment 2: Photographs - Lake Whatumā

Makirikiri Stream

Key Cultural Values
Mahinga kai

Table 1: List of documents reviewed

Year	Name	Author
2012	River Values Assessment System (RiVAS)	Lindis Consulting
2012	Tukituki River Catchment Cultural Values and Uses	Te Taiwhenua O Tamatea & Te Taiwhenua O Heretaunga for HBRC
2016	Heretaunga Tamatea Deed of Settlement	Heretaunga Tamatea and the Crown
2018	Makirikiri Stream Restoration Begins Near Takapau	Hawke's Bay Regional Council
2018	Cultural Values Table	Hawke's Bay Regional Council

Discussion

*Purpose of report **

1. The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the Makirikiri Stream are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the cultural values attributed to the Makirikiri Stream in those documents referred to in Table 1, above. For clarification, the Makirikiri Stream has been identified as potentially outstanding for the cultural value set only. In accordance with decisions made by the RPC in May 2018, this report does not discuss the recreation, landscape and ecology values associated with the Makirikiri Stream.
3. The report summarises the values into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.
4. Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Overview

5. The Makirikiri Stream is culturally significant to the people of Te Rongo a Tahu Marae. Historically the Makirikiri Stream was a significant mahinga kai site, particularly notable for its tuna and koura.
6. The stream is in a degraded state. In more recent times, land adjoining the stream was used as the Takapau municipal rubbish site. The dump itself is now sealed and restoration efforts have taken place in an effort to improve the area.
7. In 2018, the Makirikiri Stream was identified as an environmental hotspot by Hawke's Bay Regional Council, and funding was allocated towards improving the area.

Location

8. The Makirikiri Stream is situated to the south of Takapau. It is a tributary of the Porangahau Stream, which runs into the Tukituki River.
9. The location of the Makirikiri Stream can be seen in Figures 1 and 2, below.

Figure 1: Location of Makirikiri Stream

Figure 2: Location of Makirikiri Stream

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

Cultural values

Importance

10. The Makirikiri Stream is located within the rohe of Heretaunga Tamatea. It is particularly significant to the people of Te Rongo a Tahu Marae as a mahinga kai and recreational area.

11. The relationship between Tāngata whenua and freshwater is founded in whakapapa, which is the foundation for an inalienable relationship between Māori and freshwater that is recorded, celebrated and perpetuated across generations.

Mahinga kai

12. Historically, the Makirikiri Stream was a significant mahinga kai site for Te Rongo a Tahu Marae, particularly notable for its for tuna and koura.

Makirikiri Stream Restoration Project

13. In 2017, the Hawke's Bay Regional Council allocated $70,000 of funding within the Annual Plan to restore a section of the Makirikiri Stream (see Figures 3 and 4). During 2017, weed control was carried out at the site removing a number of mature willow trees and large amount of blackberry from in and around the stream.

14. The Makirikiri Stream restoration project is currently on hold and further consultation is occurring with landowners and the local marae to finalise a plan for the site. At this stage, the restoration project will see around 500 metres of the stream edge fenced with natives best suited to the dry conditions planted along the riparian margin. A path will be made on the southern side of the stream so that whanau and the local community can enjoy the area as it flourishes.

15. The Makirikiri Stream restoration project will be useful as a demonstration site for riparian management, showing local landowners how they might also improve water quality and ecosystem health. There is a high level of support for the project within the local community.

16. On 11 February 2018, the whanau of Te Rongo a Tahu Marae held a whakawaatea on the site with HBRC and CHBDC Councillors. Joanne Heperi of Te Rongo a Tahu Marae says:

    "This is an exciting project for all of the Takapau community" …"The willow removal has already opened up the stream which helps the passage of migratory fish such as eels. The riparian planting of native trees will help restore the ecosystem and mauri, bringing the biodiversity back into the waters, especially the tuna (eels), koura, and other taonga species. And it will help bring people back to the river"

17. The restoration site (after weed control works) can be seen Figures 3 and 4.

Figure 3: Aerial view of Makirikiri Stream restoration spot

Figure 4: Aerial view of Makirikiri Stream restoration spot

Archaeology

18. Figure 5 identifies the archaeological sites around Takapau.

Figure 5: Archaeological sites around Takapau

Statutory Acknowledgement Area of Interest

19. Figure 6 details the Heretaunga Tamatea Area of Interest

Figure 6: Heretaunga Tamatea Area of Interest

Resource Management Plans

20. The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply near the Makirikiri Stream. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Iwi and Hapū Resource Management Plans
Kahungunu ki Uta, Kahungunu ki Tai: Marine & Freshwater Fisheries Strategic Plan
Mana Ake - An Expression of Kaitiakitanga, Te Taiwhenua o Heretaunga

Regional Resource Management Plan
Section 5.9 (Tukituki River Catchment) – various objectives, policies, limits and targets apply to water quantity and water quality
Catchments Sensitive to Animal Effluent Discharges (Schedule 6b)
Minimum Flow Rivers (Schedule 7)
Rivers Considered for Riparian Protection (Schedule 8)
Schedule 14c – Tukituki River Sub-catchments
Schedule 15 – Tukituki Plan Change 6 – Water Management Zones

Regional Coastal Environment Plan
Specific water quality standards apply to Tukituki River downstream of Tamumu bridge • 100 Faecal Coliforms (cfu/100ml) • 10 Suspended Solids (mg/l)
Schedule R - Stock Management Areas - Tukituki River mouth

Hastings District Plan
Appendix 50 - Waahi Tapu Sites

Central Hawke's Bay District Plan
Appendix C – Schedule of sites of cultural significance to tāngata whenua – contains archaeological sites
Appendix H – Schedule of identified community facilities includes several marae – for information purposes only (no rules).

Mangahouanga Stream (Dinosaur Stream)

Key Values
Cultural
Landscape (geological features)
Natural Character

Table 1: List of publications reviewed

Year	Name	Author
1980	Dinosaur bone found in Hawke's Bay	Daily telegraph
1993	The Hunt for New Zealand's Dinosaurs	The New Zealand Geographic
1994	Cretaceous Research Paper – A Late Cretaceous polar dinosaur fauna from New Zealand	Molnar, Wiffen
1994	Rocks hold special treasures	Dominion post
1994	Dinosaur centre expected to be top attraction	Napier Courier
1994	Ancient exhibit	Dominion post
1994	Small bone was the beginning of a gigantic discovery for Hawke's Bay	Napier courier
1994	Napier Centre to feature New Zealand Dinosaur relics	Dominion post newspaper
2000	"Romancing the bone" how an amateur fossil hound unearthed dinosaur remains in a most unlikely place and rocked the word of palaeontology	Discovery Magazine
2001	Email to MTG	J. Wiffen
2016	Terrestrial fossils	The Encyclopaedia of New Zealand
2016	New Zealand Geo-preservation Inventory	Geological Society of New Zealand
2016	Scientists and Tūhoe to hunt dinosaur fossils in the Urewera range	Stuff.co.nz
2016	Tūhoe and scientists collaborate on dinosaur hunt	Science media centre
2016	Fossicking for fossils	Victorious (Victoria University)
2018	Cultural Values Table	Hawke's Bay Regional Council

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the values of the Mangahouanga Stream are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the values attributed to the Mangahouanga Stream in those documents referred to in Table 1, above.

Overview

3. The Mangahouanga Stream is a small stream in northern Hawke's Bay, which contains one of the most significant discoveries ever made in New Zealand – dinosaur bones. The remote mountain stream, now located high in the Urewera Ranges, was previously part of a large estuary area in the late cretaceous period, 65 million years ago.
4. In 1975, the first dinosaur bones were found at the Mangahouanga Stream, proving beyond doubt that dinosaurs had once lived in New Zealand. Prior to this discovery, it was widely thought that dinosaurs had not been present in New Zealand, with scientists believing New Zealand's land mass was too small for dinosaurs to exist.
5. The Mangahouanga Stream contains rich and diverse fossil concentrations, and is recognised as internationally significant on the New Zealand geo-preservation inventory. In the 1970s and 80s, fossil bones from four new species of dinosaur were found here, including a new genus of mosasaur that was from a previously unknown lineage of mosasaur.
6. In 2010, remains of a titanosauris were found at the Mangahouanga Stream site, which is the largest known dinosaur ever to have lived. In total, the remains of six separate species of dinosaurs have been found in the Mangahouanga Stream, and also New Zealand's oldest fossil insect. These discoveries gave scientists the very first glimpse into what New Zealand was like in the age of the dinosaurs.
7. The Mangahouanga Stream is internationally renowned, with the discoveries made in this stream changing scientific thinking around the type and size of land masses needed to support dinosaurs. These discoveries proved beyond doubt that land masses the size of New Zealand had the potential to support the full range of dinosaurs.
8. To date, the Mangahouanga Stream is the only place in New Zealand where significant dinosaur remains have been found. Other discoveries include theropod dinosaur remains in the Chatham Islands, a single therapod fossil bone (from the Jurassic period) by the mouth of the Waikato River, and dinosaur footprints in Nelson.

Location

9. The Mangahouanga Stream is located in the Urewera Ranges around 120 km inland, to the east of Te Hoe River. It is part of the Mohaka catchment and is a tributary of Te Hoe River.
10. The location of Mangahouanga Stream can be seen in Figures 1 and 2, below.

Figure 1: location of Mangahouanga Stream

Figure 2: location of Mangahouanga Stream

*Cultural values **

11. The Mangahouanga Stream is located within an area with interests relating to Ngāti Kahungunu, Ngāti Tūwharetoa, Ngai Tūhoe and Ngāti Pāhauwera.

12. While no direct customary linkages have been established back to the Mangahouanga Stream by name in the documents reviewed in Table 1, it is recognised that all fresh water bodies have special cultural, spiritual, historical and traditional associations with freshwater. The relationship between Tāngata whenua and freshwater is founded in whakapapa, which is the foundation for an inalienable relationship between Māori and freshwater that is recorded, celebrated and perpetuated across generations. Freshwater is recognised by Māori as a taonga of paramount importance, and as such, all waterbodies have important spiritual, physical and customary value.

13. Attachment 1 contains further information on the cultural values associated with the Mangahouanga Stream.

Recreation values

14. The Mangahouanga Stream is surrounded by private forestry and is difficult to access by road. The stream is accessible by car if prior arrangements are made with the forestry company who will open any locked gates and ensure no logging trucks are present in the area.

15. As such, the Mangahouanga Stream is not highly used for recreational activities.

Ecology values

16. The Mangahouanga Stream is a remote stream surrounded by private forestry and native bush areas. Given the lack of development pressures in the surrounding area the river is expected to be in a near natural state.

17. There are likely to be some native fish and wildlife associated with the Mangahouanga Stream however, no surveys or studies have been undertaken of this area so this information is unknown.

18. Future harvesting of the pine forest may have some effects on the ecology of the river and water quality.

Landscape / scenic values

19. The Mangahouanga Stream is located high in the Urewera Ranges, surrounded by a combination of private forestry and native forest areas. While the secluded bush landscape around the stream is attractive, the Mangahouanga Stream is renowned for its rich and diverse fossil concentrations.

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20. The Mangahouanga Stream is internationally renowned with the remains of six separate species of dinosaurs, including four new species of dinosaurs and New Zealand's oldest known fossil insect, having been discovered here.

21. The National Geo-preservation Inventory, which identifies and ranks geological features according to their relative significance, classifies the following features in the Mangahouanga Stream as nationally significant:

    - The first, and to date the only, record of terrestrial dinosaurs found in New Zealand.
    - Rich and diverse Cretaceous vertebrate fossils in concentrations, including New Zealand's only known dinosaurs and New Zealand's oldest known fossil insect, as well as fossil turtles, mosasaurs, elasmosaurs, plesiosaur and early fish.

22. Photographs of the Mangahouanga Stream are contained in Attachment 2.

Geological features

23. Around 70 million years ago the Mangahouanga Stream was part of a very different New Zealand landscape, vastly different from the mountain stream it is today. In the late cretaceous period the Mangahouanga Stream was part of a larger estuarine environment lying directly on the east coast. At this time, New Zealand was covered in lush rainforest and was a much larger land mass than today.

24. The fossil dinosaur remains found at Mangahouanga Stream were washed into streams by heavy rains on land, and swept down to the sea where they were preserved as marine fossils along the coast, finally ending up in the concretionary boulders in the valley of the Mangahouanga Stream.

25. In 1975, a tailbone from a four metre long, half a tonne carnivorous dinosaur was found at the Mangahouanga Stream site. In the years to follow, evidence of a nine metre allosaur, an economy version of the T-rex, an ankylosaur, a low slung armoured beast, a hypsilophosont and a four metre long plant eater were found, proving beyond doubt that both marine and terrestrial dinosaurs had once lived in New Zealand.

26. Until these discoveries, New Zealand was considered to be one of the least likely places for dinosaurs to have lived. Scientists considered the islands were too small and too isolated to have supported hungry reptilian giants. Further, experts considered dinosaur survival to be very unlikely due to New Zealand's turbulent geological history in which the land has sank and emerged from beneath the waves many times.

27. To date, the Mangahouanga Stream has provided rich and diverse fossil concentrations. A total of six separate species of dinosaurs, four of which are unique to New Zealand, have been found at this location, in addition to a range of other marine and plant fossils, including New Zealand's oldest known fossil insect, and teeth from the first known southern hemisphere sawfish.

28. Of the species of dinosaur discovered, three were meat eaters and three were herbivores. A number of marine reptiles, notably mosasaurs and plesiosaurs, and the pterosaurs, otherwise known as the flying reptile, were also found at this site.

29. The most significant findings at Mangahouanga Stream are outlined in Table 2, below.

Table 2: Significant fossil findings at Mangahouanga Stream

Year	Dinosaur name/ type	Description
1974	Theropod	The toe bone of a small theropod dinosaur was the first dinosaur remains found at the Mangahouanga Stream. This was followed by the discovery of a nine metre long allosaur, a large headed carnivorous, creature resembling a smaller spryer T. Rex. In total, three different types of theropods dinosaurs were found at the Mangahouanga Stream. Theropods are groupings of carnivorous dinosaurs.
1975, 1986	Ankylosaur	The remains of ankylosaur dinosaurs were found at the Mangahouanga Stream. This was the first dinosaur fossil which was also found in Antarctica, the significance being that dinosaur fossils were found in all lands that once made up Gondwana. Ankylosaur's are "stiff lizards" and known as the military tanks for the dinosaur world, weighing half a tonne, three metres long, with bony armour set into leathery skin for defence.

1978	Plesiosaur	A complete plesiosaur skull was exhumed, which is one of only a dozen complete plesiosaur skulls in the world. Plesiosaur's are the most numerous inhabitants of the "valley graveyard", with the remains of very young offspring as well as 10 metre adults being found.
1987	Pterosaur	The first pterosaur fossil, otherwise known as the flying reptile, was found at Mangahouanga Stream.
1990	Mosasaur	A skeleton of a mosasaur, otherwise known as the rapacious predator in our seas, was found at Mangahouanga Stream. This discovery turned out to be a completely new genus and species of mosasaur, which Joan Wiffen named Rikisaurus tehoensis and Mosasaurus flemingi. This creature was a massive carnivorous marine reptile that grew to be as long as 13 metres. It had powerful sinuous bodies, broad, webbed paddles for limbs and long conical, tooth filled heads like those of alligator. Mosasaurs were the dominant marine predators during the last 20 million years of the Cretaceous period. While mosasaurs had been discovered in New Zealand before, they are not particularly common.
1999	Titanosaurid	A titanosaurid was found at the Mangahouanga Stream site, dated at 80 million years old - three million years after New Zealand split from Gondwanaland. Titanosaurids were widespread globally and lived during the Cretaceous period, between 83 and 65 million years ago. They had small heads, a long neck and tail, and a large body. They were up to 45 metres in length and weighed up to 50 tonnes. The dinosaur would have been a "plant vacuum cleaner" living in the fringes of bush and shorelines.

Naturalness/intactness of waterbody

30. Given the lack of development pressures around the Mangahouanga Stream it is expected to be in a near natural state.

Water Quality

31. Hawke's Bay Regional Council does not monitor the water quality of the Mangahouanga Stream. However, future harvesting of the forestry land in this catchment may have effects on the water quality and ecology of this stream.

Other

32. Joan Wiffen's discoveries are internationally significant, proving the full range of dinosaurs lived in New Zealand after it split away from Gondwana in the early cretaceous period.

33. Joan's achievements are recognised within scientific publications, an award from an international scientific society (Society of Vertebrate Paleontology), and an honorary doctorate from Massey University. In 1995, Joan received an appointment as Commander of the Order of the British Empire from the queen, and in 2004, she accepted the Morris Skinner Award from the US-based Society of Vertebrate Palaeontology for outstanding and sustained contributions to scientific knowledge.

Values Summary

Overarching Value	Sub-value	Description	Outstanding Yes/no	Comments
Cultural	TBC	TBC	TBC	TBC
Recreational	TBC	TBC	TBC	TBC
Ecological	TBC	TBC	TBC	TBC
Landscape	TBC	TBC	TBC	TBC
Natural Character	TBC	TBC	TBC	TBC

Attachment 1

Managahouanga Stream – Cultural Values Report

Table 1: List of documents reviewed

Year	Name	Author
1992	Wai 119: The Mohaka River Report	Waitangi Tribunal
1997	Fisheries Resource Inventory: The Mohaka River	Matt Hickey, Fish and Game NZ
1997	Cultural Health Assessment of the Mohaka, Waikari and Waihua Rivers	Ngāti Pāhauwera Development and Tiaki Trust
2004	Wai 201: The Mohaka ki Ahuriri Report	Waitangi Tribunal
2010	Ngāti Pāhauwera Deed of Settlement documents	Ngāti Pāhauwera and the Crown
2010	Background to Settlement Aspirations and Expectations	Ngāti Hineuru
2015	Ngāti Hineuru Deed of Settlement documents	Ngāti Hineuru and the Crown
2016	Ahuriri Hapū Deed of Settlement documents	Ahuriri Hapū and the Crown
2016	Statutory Acknowledgement Document	Hawke's Bay Regional Council
2017	Ngāti Tūwharetoa Deed of Settlement documents	Ngāti Tūwharetoa and the Crown
2018	Cultural Values Table	Hawke's Bay Regional Council

*1. Overview **

Purpose

The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the Mangahouanga Stream are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

The report summarises the values into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Importance

The Mangahouanga Stream is located within an area with interests relating to Ngāti Kahungunu, Ngāti Tūwharetoa, Ngai Tūhoe and Ngāti Pāhauwera.

While no direct customary linkages have been established back to the Mangahouanga Stream by name in the documents reviewed in Table 1, it is recognised that all fresh water bodies have special cultural, spiritual, historical and traditional associations with freshwater. The relationship between Tāngata whenua and freshwater is founded in whakapapa, which is the foundation for an inalienable relationship between Māori and freshwater that is recorded, celebrated and perpetuated across generations. Freshwater is recognised by Māori as a taonga of paramount importance, and as such, all waterbodies have important spiritual, physical and customary value.

In 2016, Government funding was awarded to Tūhoe and two scientists, palaeontologist James Crampton and GNS scientists John Begg, to carry on the search for fossil remains in streams that flow through Te Urewera.

Tūhoe are keen to better understand the pre-history of their homeland, Te Uru Taumatua trust said. "The possibility of dinosaur fossils in Te Urewera is of great interest to Tūhoe."

2. Archaeology

There are no recorded archaeological sites in close proximity to the Mangahouanga Stream.

3. Statutory Acknowledgement Area of Interest

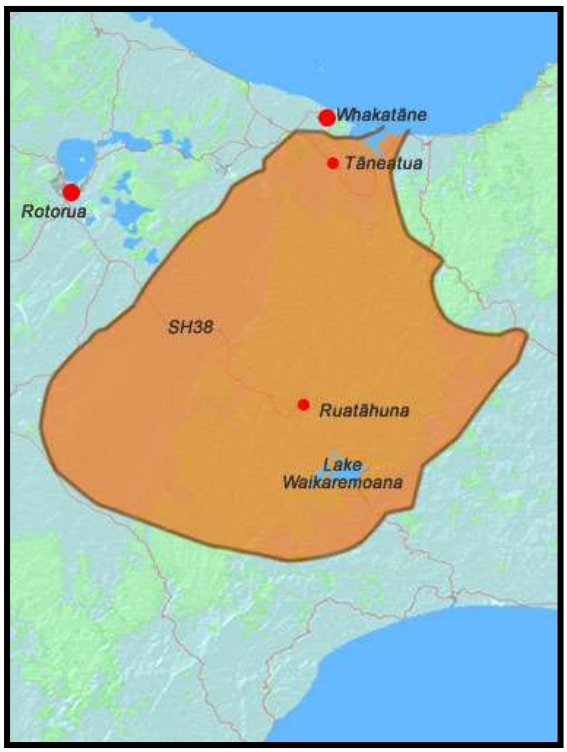

Figure 1: Tūhoe Area of Interest

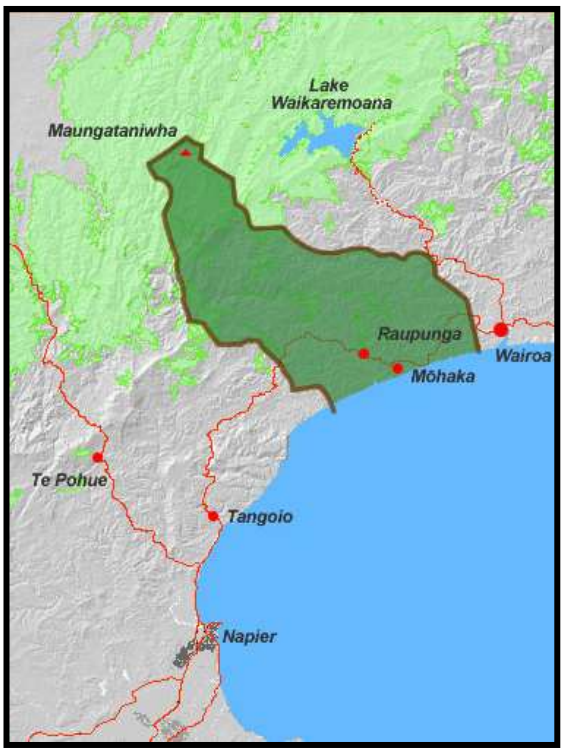

Figure 2: Ngāti Pāhauwera Area of Interest

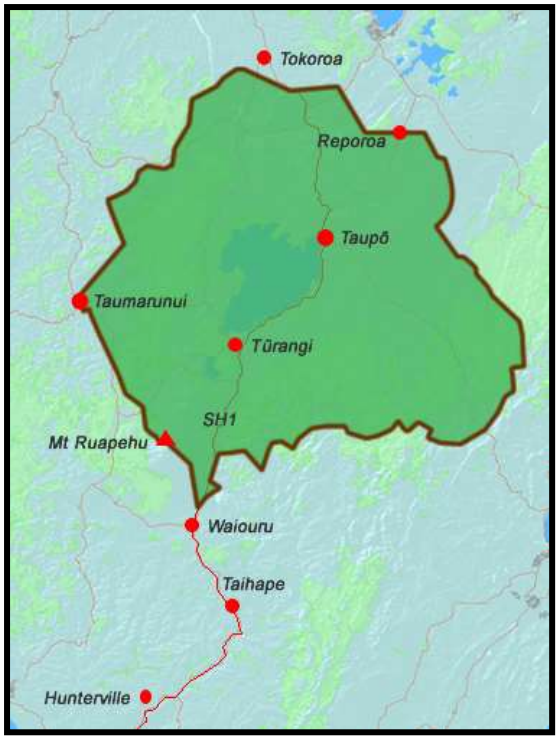

Figure 3: Ngāti Tūwharetoa Area of Interest

4. Resource Management Plans

There are no relevant provisions in resource management plans that are specific to the Mangahouanga Stream.

Attachment 2: Photographs– Mangahouanga Stream

Upper Mohaka River (above Willowflat)

Key Values
Cultural
Recreation (angling, rafting, kayaking)
Ecology (wildlife, fisheries, flora)
Landscape (scenic)
Natural Character

Table 1: List of documents reviewed

Year	Name	Author
1966	An Encyclopaedia of New Zealand	T.L Grant-Taylor
1979	64 New Zealand Rivers	Egarr, Egarr & Mackay
1981	New Zealand Recreational River Survey	G & J Egarr for National Water and Soil conservation Authority
1982	Submission on the Draft Inventory of Wild and Scenic Rivers of National Importance	Ministry of Agriculture and Fisheries
1984	A National Inventory of Wild and Scenic Rivers	National Water and Soil Conservation Authority
1984	The Relative Value of Hawke's Bay Rivers to New Zealand Anglers	Fisheries Research Division - N.Z. Ministry of Agriculture and Fisheries
1986	A List of Rivers and Lakes Deserving Inclusion in A Schedule of Protected Waters	Grindell & Guest
1989	New Zealand Freshwater Fisheries Miscellaneous Report No. 25 Evidence presented to a hearing in respect of a national water conservation order for the Mohaka River	Electricity Corporation of New Zealand Limited
1990	Mohaka River National Water Conservation Order Application	Tribunal appointed by the Minster for the Environment
1992	Report and Recommendation of the Planning Tribunal - Mohaka River National Water Conservation Order Application	Planning Tribunal
1994	Headwater Trout Fisheries in New Zealand	NIWA
1994	Hawke's Bay Conservancy – Conservation Management Strategy	Department of Conservation

1994	Conservation Management Strategy (Volume II) for Hawke's Bay Conservancy 1994 – 2004	Department of Conservation
1998	Wildlife and Wildlife Habitat of Hawke's Bay Rivers	Department of Conservation
2004	Water Conservation (Mohaka River) Order 2004	New Zealand legislation
2004	Potential Water Bodies of National Importance	Ministry for the Environment
2008	Wetland Review Monitoring	Hawke's Bay Regional Council
2009	Angler Usage of Lake and River Fisheries Managed by Fish & Game New Zealand: Results from the 2007/08 National Angling Survey- NIWA	Martin Unwin
2009	The 21 best fly fishing spots	Stuff.co.nz
2009	Death of a waterway	Stuff.co.nz
2010	Recreational Use of Hawke's Bay Rivers – Results of the Recreational Usage Survey 2010	Hawkes Bay Regional Council
2011	Taharua and Upper Mohaka Draft Strategy - A Discussion for Future Management	Hawke's Bay Regional Council
2012	River Values Assessment System (RiVAS)	Lindis Consulting
2014	Jet Boating New Zealand – Rivers Information	Jet Boating New Zealand
2015	Mohaka River Catchment – State and Trends of River Water Quality and Ecology	Hawke's Bay Regional Council
2016	Forest Lifeforce Restoration Trust, Annual Report 2015 – 2016	Forest Lifeforce Restoration Trust
2016	New Zealand Geo-preservation Inventory	Geological Society of New Zealand
2018	Mohaka River Trout and Fly Fishing	NZ fishing website
2018	Land Air Water Aotearoa (LAWA)	Hawke's Bay Regional Council
2018	Cultural Values Table	Hawke's Bay Regional Council
2018	New Zealand Waterfalls	NZ.waterfalls.co.nz
2018	Famous New Zealand Rivers	Fishing New Zealand

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the values of the upper Mohaka River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the values attributed to the upper Mohaka River, above Willowflat in those documents referred to in Table 1, above. As such, any values associated with the Mohaka River below Willowflat are not discussed in detail in this report.

Overview

3. The Mohaka River is a large river which rises in the Kaweka and Kaimanawa Ranges flowing into Hawke Bay 175 km later, near the town of Mohaka. The upper reaches of the Mohaka River are renowned for their spectacular scenery and exceptional whitewater boating opportunities.
4. The upper Mohaka River is in a near natural state, with high ecological values which include a number of threatened species of plants and animals. In 1996, the river was recognised as meeting the Ramsar Sites Criteria which identifies wetlands of international importance.
5. The upper Mohaka River is widely recognised as a top quality wilderness trout fishery, providing anglers with an opportunity to catch large trophy trout in a natural setting. A number of international visitors come to the area each year.
6. The Mohaka River has a total catchment area of 2440 km^2. The land use in the upper catchment is predominately farming and plantation forestry. Dairy farming occurs on land surrounding the Taharua River which is a major tributary of the Mohaka River.

7. The Mohaka River is known for its stable riverbed which clears quickly after floods and has steady water levels all year round. There are no weed or cyanobacteria problems associated with the Mohaka River, however the quality of water flowing from the Taharua River into the Mohaka River has been steadily declining since the 1990s.

8. In 2004, the upper Mohaka River was recognised as containing nationally outstanding recreational and scenic characteristics, and a water conversation order (WCO) was put in place which restricted damming above State Highway 5. A WCO is the highest level of protection that can be afforded to any water body in New Zealand.

Location

9. The Mohaka River is located approximately 48 km northeast of Napier on the east coast of the North Island. Its main tributaries are the Waipunga, Taharua, Te Hoe and Hautapu rivers.

10. The location and extent of the Mohaka River can be seen in Figures 1 and 2, below.

Figure 1: Mohaka River

Figure 2: Mohaka River (above State highway 5)

*Cultural values **

11. The upper Mohaka includes the overlapping areas of interest of four treaty settlement entities: Ngāti Hineuru, Ngāti Pāhauwera, Ahuriri Hapū and Ngāti Tūwharetoa. The Mohaka River has been used as a significant boundary marker to define areas of interest. Mohaka is said to have been the name of a river or stream in Hawaiki.

12. Many people who gave evidence in the various Waitangi Tribunal inquiries spoke about the sacralised qualities of this interior landscape, especially of the rivers. Traditionally, there were many pā, kāinga, cultivations, mahinga kai and urupā – many listed by people in Waitangi Tribunal evidence as being used in remembered history and since 1840. The landscape is a culturally dense one loaded with a wealth of place names and remembered events. The upper Mohaka was also a key route inland.

13. Hineuru kaumatua describe the wealth of resources provided by the Mohaka River. It was significant as a mahinga kai resource, the river was plentiful with fish species tuna, trout and koura. The forest around the Mohaka River was very dense and provided many important resources including harakeke, toitoi, birdlife and a range of plants used for medicinal purposes.

14. Attachment 1 contains a more detailed explanation of the cultural values associated with the upper Mohaka River, above Willowflat.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

Recreation values

15. The Mohaka River is widely recognised in New Zealand as a 'top quality wilderness trout fishery' and for its exceptional rafting and kayaking experiences. It contains a variety of water conditions for fishing and boating and is easy to access at various points throughout the catchment making it a highly valued recreational resource in Hawke's Bay.

16. The recreational activities associated with the Mohaka River have been discussed in a number of nationally published documents over the last 40 years, and are consistently described as outstanding, nationally important and exceptional.

17. In 1984, the Mohaka River was the only river in Hawke's Bay to be included in the Governments National Inventory of Wild and Scenic Rivers, included for its wide variety of recreational experiences which can occur in a diverse landscape.

18. In 2004, a WCO was placed over the Mohaka River to protect the river's outstanding scenic characteristics, trout fishery and rafting and canoeing values. A WCO is a special type of protection that is the equivalent of a national park status for a water body.

19. The recreational activities which take place on the upper Mohaka River are discussed in more detail below.

Angling

20. The Mohaka River is classed as a wilderness and recreational trout fishery with exceptional scenic beauty. It is particularly valued for its clear, cool waters and high numbers of large trout which can reach trophy size. The headwaters are dominated by brown trout which is an unusual characteristic of a headwater fishery where both rainbow and brown trout co-exist.

21. The Mohaka River provides a range of fishing experiences from remote back country fishing, only accessible by a long walk or helicopter, to easily accessible, scenic areas, that contain high numbers of trout. The river has a significant biomass[1] of trout and twice as many large fish as other rivers in the Kaimanawa and Kaweka Ranges.

22. Drift diving undertaken in the 1990s indicates that the number of large trout in the upper Mohaka River are around 48 per km up to 70 per km in stretches. For biomass, the headwaters of the Mohaka River ranked 10th highest in New Zealand[2] and 4th highest in the North Island.

23. In 1982, the Mohaka River was identified by the Ministry of Agriculture and Fisheries as a nationally important scenic and recreational trout fishery. A total of six rivers in New Zealand were identified as being nationally important for these attributes.

24. In 1984, a report by the Fisheries Research Division identified the Mohaka River as supporting a nationally important recreational and scenic trout fishery. The Mohaka River was identified as having exceptional overall importance for its high use, scenic beauty, solitude, large trout and other recreational opportunities.

25. In 1986, the Government released a finalised list of rivers and lakes with outstanding wild, scenic, recreational or other natural characteristics that should be protected. The Mohaka River was placed in 'Group One'[3] for its recreational qualities with specific reference to its nationally important trout fishery.

26. In 1994, the Mohaka River was identified by NIWA as a Category A headwater trout fishery which contains trophy trout and fishes well all season. There are a total of 18 Category A headwater fisheries in the North Island.

27. In 2004, the Mohaka River was recognised as a Potential Water Body of National Importance for recreation by the Ministry for the Environment. Later that year, a water conservation order was placed over the Mohaka River, in recognition of a number outstanding features, including its outstanding trout fishery above State Highway 5.

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[1] For comparison with other river habitats, the abundance of fish or biomass takes into account the size of the fish and the size of the river.

[2] Out of 158 reaches

[3] Group One = Excellent rivers or lakes containing an outstanding cultural, fisheries, wild flora, location, recreation, scenic, scientific, tourism, wildlife habitat, value(s). Group One contains the very best examples of these values.

28. In 2012, the Mohaka River was identified as nationally significant for salmonid angling in the Hawke's Bay RiVAS assessments.

Boating

29. The Mohaka River is nationally renowned for its whitewater boating opportunities, with several commercial rafting and canoeing organisations operating in this area. Its stable water flows means the river can be paddled all year round, making it usable when many other rivers are not due to summer low flows.

30. The Mohaka River provides for a range of whitewater experiences above Willowflat, including single and multi-day rafting and kayaking trips. The river is particularly valued for it is increasing skill demands as the river progresses, allowing a graduation from beginner to intermediate paddling ability.

31. The Mohaka River is best known by paddlers for its technical Grade 4 and 5 rapids which can only be found in a few other rivers in New Zealand. In particular, the Te Hoe and the Mokonui gorges provide a demanding and exciting canoeing experience and have an international reputation.

32. In 1981, the New Zealand Recreational River Survey described the Mohaka River as one of the most frequently used rivers in the country, which provides for all levels of paddling difficultly along its length.

33. The upper Mohaka River provides a 55 km stretch of jet boating water between Pakaututu Road and Te Hoe. This area requires advanced jet boating skills, passing through gorges and around numerous rocks and boulders. This water is difficult to navigate and not suitable for family boating. The section of river between Te Hoe and Willowflat is a 10 km stretch of water which contains severe rapids and is unlikely to be used by jet boats.

34. In 1981, The Recreational River Survey assigned the recreational and scenic values of the upper Mohaka to Pungahuru an 'intermediate'[4] and 'moderate'[5] rating, respectively. From Pungahuru to Willowflat the recreational and scenic values were rated 'high' and 'impressive', respectively.

35. In 1986, The Mohaka River was placed in 'Group one'[6] in the Government's list of rivers and lakes deserving protection for its scenic and recreation qualities, with specific note given to its rafting and canoeing values.

36. In 2004, The Mohaka River was recognised as a Potential Water Body of National Importance for recreation by the Ministry for the Environment. Later that year, a water conservation order was placed over the Mohaka River, in recognition of the rivers outstanding rafting and canoeing values between the State Highway 5 Bridge and Willowflat.

37. In 2012, Hawke's Bay RiVAS assessments for whitewater kayaking concluded the Mohaka River was nationally significant for whitewater kayaking.

38. In 2014, Jet boating New Zealand classified the section of the Mohaka River between Pakaututu and Te Hoe, as a difficult 'Class 3' jet boating trip requiring advanced boating skills, not suitable for families. The section between Te Hoe and Willowflat is classified as 'Class 4' jet boating which is unlikely to be boated due to lack of flow and/or obstructions.

Ecology values

39. The Mohaka River is recognised as a good example of an unmodified, deeply gorged river in New Zealand. The river has high ecological diversity, with a number of threatened endemic species of plants and animals present in the upper catchment.

40. Notably, in 1996 the Mohaka River was identified as meeting the Ramsar Sites Criteria which is part of an intergovernmental treaty and used to assist countries to identify wetlands of international importance.

41. In 2004, the Mohaka River was identified as a Potential Water Body of National Importance for aquatic biodiversity values by the Ministry for the Environment.

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[4] Recreational values graded on a five point scale: insignificant, low, intermediate, high, exceptional

[5] Scenic values graded on a six point scale: dull, uninspiring, moderate, picturesque, impressive, exceptional.

[6] Group One = Excellent rivers or lakes containing an outstanding cultural, fisheries, wild flora, location, recreation, scenic, scientific, tourism, wildlife habitat, value(s). Group One contains the very best examples of these values.

42. The ecological values associated with the upper Mohaka River are discussed in more detail below.

Fish

43. The upper Mohaka River has a highly valued habitat for both native and introduced fish species by providing a near natural environment with high water quality. Despite this, the upper reaches of the river have low native fish diversity with no rare or endangered species of native fish recorded in the area.

44. The upper reaches of the Mohaka River supports high populations of both longfin eel and large brown trout. Brown trout dominate the Mohaka headwaters which is an unusual characteristic of a mixed headwater fishery. Long finned eels are located throughout the catchment as far upstream as Poronui.

45. The most significant feature affecting the distribution of native fish in the upper Mohaka River is the Mokonui Gorge which acts as a natural barrier. This limits the native fish population above the gorge to only those native migratory fish species that are good climbers.

46. In 1996, the Department of Conservation identified the Mohaka River as meeting the Ramsar Sites Criteria which identifies wetlands of international importance, specifically noting that the river supports ten indigenous species of fish which adds to the rivers special value for maintaining the genetic and ecological diversity of the region.

47. In 2012, the Mohaka River was identified as regionally significant in the Hawke's Bay RiVAS assessments for native fish. The RiVAS assessment concludes that the average number of native fish in the Mohaka catchment is 40,305.

Wildlife

48. The Mohaka River provides habitat for many native bird species including the globally endangered blue duck (whio), and the nationally vulnerable long tailed bat which roosts in the gorges and riparian areas. Whio are extremely rare, more so than the kiwi with around 23 kiwi for every whio.

49. The Mohaka River is recognised as being a significant wildlife habitat for the blue duck, supporting around 2% of the national population. The Mohaka River is noted as containing a highly fragmented population of blue duck which consists of a number of isolated groups totalling around 60 birds.

50. In 1996, the Department of Conservation identified the Mohaka River as meeting the Ramsar Sites Criteria, which identifies wetlands of international importance. With regard to wildlife the report notes:

- The river and its tributaries supports almost 2% of the world population of *Hymenolaimus malacorhynchus* (blue duck)
- The river and its tributaries are of special value for their endemic plant and animal species.
- In 2012, the Mohaka River (above the Te Hoe confluence) was identified as regionally significant in the Hawke's Bay RiVAS assessments for native birdlife.

Flora

51. Notable plants in the upper Mohaka catchment include *Pittosporum turneri (*commonly called Turner's kohuhu*),* the tussock *Chionochloa flavicans*, which is confined to small areas of the eastern North Island, and the calceolaria *Jovellana sinclairii*, a species restricted to the east coast of North Island. *Jovellana sinclairii* is thought to be the native herbaceous plant with the most restricted distribution in New Zealand.

52. In 1996, the Department of Conservation identified the Mohaka River as meeting the Ramsar Sites Criteria, which identifies wetlands of international importance. With regard to flora the report notes:

- The river and its tributaries support a diverse fauna, including several species with restricted distributions, which adds to the river's special value for maintaining the genetic and ecological diversity of the region
- The river and its tributaries supports populations of threatened species of plant, *Pittosporum turneri*
- The river and its tributaries are of special value for their endemic plant and animal species.

Macroinvertebrates

53. Hawke's Bay Regional Council regularly monitors the freshwater ecology of the Mohaka River at the following sites (see Table 2). The macroinvertebrate measures in Table 2 provide an indication of stream health, where generally, the higher the Macroinvertebrate Community Index, taxa richness and percent EPT, the better the health of the stream.

54. The monitoring results show that the ecological health of the Mohaka River is generally very good, with mild pollution potentially occurring downstream of the Waipunga confluence.

Table 2: Macroinvertebrate sampling results – Mohaka River (median 2011 - 2016)

Monitoring site	Macroinvertebrate Community Index (MCI)	Classification	Taxonomic richness	Percent EPT[7] richness
Mohaka site downstream of the Ripia River confluence	MCI >119	Excellent	21.5	62.4%
Mohaka River downstream of the Waipunga River confluence	MCI between 100 and 119	Good	24	50%

Note: Regional Councils use a classification from Stark & Maxted (2007) for MCI sampling, assigning a rating of either excellent, good, fair or poor for ecological health and/or habitat condition.

Landscape / scenic values

55. The Mohaka River is known for its impressive scenic qualities which show a range of landforms. The river runs clean and clear through large native forest areas. Below the Taharua confluence the Mohaka River is shallow and stony, flowing through remote countryside with scrub covering the hills.

56. From Pungahuru, the Mohaka River is entrenched in spectacular gorges almost continuously down to Te Hoe. The increased flows in this section of the river make it more diverse and energetic with large numbers of big boulders, rapids, chutes and plunge pools. There are some powerful rapids within this section which cascade over and around the large boulders.

57. Between Pungahuru and Te Hoe, the river has several waterfalls which drop into the river from impressive heights. Of particular note is the Pungahuru Falls which is a scenic horsetail waterfall that drops 25 m into the Mohaka River.

58. In 1979, the Mohaka River was given an 'impressive'[8] scenic rating in the report titled 64 New Zealand Rivers, which contains an indepth scenic evaluation of sixty four of New Zealand's major Rivers.

59. In 1981, the New Zealand Recreational River Survey assigned the section of Mohaka River from its upper reaches to the Taharua confluence a 'moderate' scenic rating, and from Pungahuru to Te Hoe an 'impressive' scenic rating.

60. In 1984, the Mohaka River was identified on the Governments National Inventory of Wild and Scenic Rivers, with the final 1986 inventory placing the Mohaka River in 'Group one'[9] for its wide variety of recreational experiences in a diverse landscape.

61. In 2004, a water conservation order was placed over the Mohaka River identifying and protecting the outstanding scenic characteristics of the Mokonui and Te Hoe gorges.

62. Photographs of the upper Mohaka River above Willowflat are contained in Attachment 2.

[7] EPT stands for Ephemeroptera (mayfly), Plecoptera (stonefly) and Trichoptera (caddisfly), and are macroinvertebrates which are sensitive to water pollution.

[8] Scenic values graded on a five point scale: dull, ordinary, interesting, impressive, exceptional.

[9] Group One = Excellent rivers or lakes containing an outstanding cultural, fisheries, wild flora, location, recreation, scenic, scientific, tourism, wildlife habitat, value(s). Group One contains the very best examples of these values.

Geological features

63. The Pungahuru Falls and the Mohaka River Horseshoe Bend are the most notable geological features on the Mohaka River, above Willowflat.

64. The Pungahuru Falls are a 'horsetail' style type waterfall which are created as the Pungahuru Stream drops into the gorge above the Mohaka River. The falls have a total height of 25 m and are described as a 'hidden gem' on the New Zealand waterfalls website.

65. The Mohaka River Horseshoe Bend is an excellent example of a horseshoe bend on a meandering river. The National Geo-preservation Inventory, which ranks geological features according to their relative significance, classifies the Mohaka River Horseshoe Bend as regionally significant.

Naturalness/intactness of waterbody

66. The Mohaka River is largely unmodified in its upper reaches. In particular, the section of the Mohaka River upstream of the Ripia River confluence, is noted for its naturalness and its pristine wilderness.

67. In 2012, Hawke's Bay RiVAS assessments for natural character concluded the Mohaka River was nationally significant for natural character.

Water Quality

68. Hawke's Bay Regional Council regularly samples the water quality of the upper Mohaka River, above Willowflat at the following locations (see Table 3). The nitrate and ammonia attribute bands provide an indication of the chronic toxicity risk to aquatic animals.

69. The monitoring results generally show that the Mohaka River has excellent nutrient water quality, with very low levels of nitrogen and low to moderate levels of phosphorus. All sites fall within the NPSFM A band which reflects an extremely low risk of nitrate and ammonia toxicity for any aquatic species.

Table 3: Water quality – Mohaka River (2016)

Monitoring site	Water clarity	Nitrogen	Phosphorus	Microbiological Indicator (*E. coli*)
Mohaka at Glenfalls (NIWA SITE)	Turbidity = 1.26 NTU; Black disk = 3.15 metres. Both within the best 50% of like sites within New Zealand.	NOF BAND A Total Nitrogen, and Total Oxidised Nitrogen are within the best 50% of like sites within New Zealand. Total Nitrogen = 0.346 g/m3; Total Oxidised Nitrogen = 0.2745 g/m3 (Annual median) and 0.363 g/m3 (95th percentile); Ammoniacal Nitrogen is In the best 25% of like sites in New Zealand Ammoniacal Nitrogen = 0.0047 g/m3 (Annual median), 0.0134 g.m3 (annual maximum)	Dissolved Reactive Phosphorus, and Total Phosphorus are within the best 25% of 'like' sites within New Zealand. Dissolved Reactive Phosphorus = 0.005 g/m3, Total Phosphorus =0.01 g/m3.	NOF Band A E. coli = 15 n/100ml (annual median) In the best 25% of like sites in New Zealand
Mohaka site downstream of the Ripia River confluence	Turbidity = 1.38 NTU; Black disk = 2.6 metres. Both within the best 50% of like sites within New Zealand.	NOF BAND A Total Nitrogen, and Total Oxidised Nitrogen are within the best 50% of like sites within New Zealand. Total Nitrogen = 0.36 g/m3; Total Oxidised Nitrogen = 0.27 g/m3 (Annual median) and 0.441 g/m3 (95th percentile); Ammoniacal Nitrogen is In the best 25% of like sites in New Zealand Ammoniacal Nitrogen = 0.0046 g/m3 (Annual median), 0.0126 g.m3 (annual maximum)	Dissolved Reactive Phosphorus, and Total Phosphorus are within the best 25% of 'like' sites within New Zealand. Dissolved Reactive Phosphorus = 0.005 g/m3, Total Phosphorus =0.0085 g/m3.	NOF Band A E. coli = 13 n/100ml (annual median) In the best 25% of like sites in New Zealand

Monitoring site	Water clarity	Nitrogen	Phosphorus	Microbiological Indicator (*E. coli*)
Mohaka River D/S Taharua River Confluence	Turbidity = 1.67 NTU; Black disk = 2.8 metres. Both within the best 50% of like sites within New Zealand.	NOF BAND A Total Nitrogen = 0.7 g/m3; Total Oxidised Nitrogen = 0.61 g/m3 (Annual median) and 0.98 g/m3 (95th percentile) Total Nitrogen, and Total Oxidised Nitrogen are within the worst 50% of like sites within New Zealand. Ammoniacal Nitrogen = 0.0031 g/m3 (Annual median), 0.0069 g/m3 (annual maximum) Ammoniacal Nitrogen is in the best 25% of like sites in New Zealand	Dissolved Reactive Phosphorus = 0.006 g/m3, Total Phosphorus =0.0105 g/m3. Total Phosphorus is in the best 25% of like sites in New Zealand Dissolved Reactive Phosphorus is in the best 50% of like sites in New Zealand	NOF Band A E. coli = 9 n/100ml (annual median) In the best 25% of like sites in New Zealand
Mohaka River downstream of the Waipunga River	Turbidity = 2.3 NTU; Black disk = 1.9 metres. Black disk test is within the best 50% of like sites in New Zealand. Turbidity state is in the worst 50% of like sites within New Zealand.	NOF BAND A Total Nitrogen = 0.28 g/m3; Total Oxidised Nitrogen = 0.1975 g/m3 (Annual median) and 0.286 g/m3 (95th percentile) Total Nitrogen, and Total Oxidised Nitrogen are within the best 50% of like sites within New Zealand. Ammoniacal Nitrogen = 0.0057g/m3 (Annual median), 0.0216 g/m3 (annual maximum) Ammoniacal Nitrogen is in the best 25% of like sites in New Zealand	Dissolved Reactive Phosphorus = 0.006 g/m3, Total Phosphorus =0.011 g/m3. Both are in the best 50% of like sites within New Zealand.	NOF Band A E. coli = 12 n/100ml (annual median) In the best 25% of like sites in New Zealand
Mohaka River upstream of the Taharua River Confluence	Turbidity = 0.86 NTU; Black disk = 5.3 metres. Both within the best 25% of like sites within New Zealand.	NOF BAND A Total Nitrogen = 0.055 g/m3; Total Oxidised Nitrogen = 0.024 g/m3 (Annual median) and 0.0617 g/m3 (95th percentile); Ammoniacal Nitrogen = 0.0025 g/m3 (Annual median), 0.0057 g/m3 (annual maximum) All are within the best 25% of like sites within New Zealand.	Dissolved Reactive Phosphorus = 0.0048 g/m3, Total Phosphorus =0.006 g/m3. Both are in the best 25% of like sites within New Zealand.	NOF Band A E. coli = 7 n/100ml (annual median) In the best 25% of like sites in New Zealand

Note 1: NOF BAND A for E.coli = water suitable for designed use with les 1% risk of infection from contact with water during activities with occasional immersion (such as wading and boating). Band A is suitable for swimming.

Note 2: NOF BAND A for Nitrogen = high conservation values system. Unlikely to be effects even on sensitive species.

Values Summary

Overarching Value	Sub-value	Description	Outstanding Yes/no	Comments
Cultural	TBC	TBC	TBC	TBC
Recreational	TBC	TBC	TBC	TBC
Ecological	TBC	TBC	TBC	TBC
Landscape	TBC	TBC	TBC	TBC
Natural Character	TBC	TBC	TBC	TBC

Attachment 1

Upper Mohaka River – Cultural Values Report

Key Values
Spiritual Values
Wāhi Tapu, wāhi taonga, wai tapu
Mahinga kai, Pā tuna
Pā, Kāinga
Rohe boundary

Table 1: List of documents reviewed

Year	Name	Author
1992	Wai 119: The Mohaka River Report	Waitangi Tribunal
1997	Fisheries Resource Inventory: The Mohaka River	Matt Hickey, Fish and Game NZ
1997	Cultural Health Assessment of the Mohaka, Waikari and Waihua Rivers	Ngāti Pāhauwera Development and Tiaki Trust
2004	Wai 201: The Mohaka ki Ahuriri Report	Waitangi Tribunal
2010	Ngāti Pāhauwera Deed of Settlement documents	Ngāti Pāhauwera and the Crown
2010	Background to Settlement Aspirations and Expectations	Ngāti Hineuru
2015	Ngāti Hineuru Deed of Settlement documents	Ngāti Hineuru and the Crown
2016	Ahuriri Hapū Deed of Settlement documents	Ahuriri Hapū and the Crown
2016	Statutory Acknowledgement Document	Hawke's Bay Regional Council
2017	Ngāti Tūwharetoa Deed of Settlement documents	Ngāti Tūwharetoa and the Crown

1. Introduction *

Purpose

The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the upper Mohaka River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

This report presents the summarised findings of the cultural values attributed to the upper Mohaka River in those documents referred to in Table 1, above.

The report summarises the cultural values associated with the upper Mohaka River into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Importance

The upper Mohaka includes the overlapping areas of interest of four treaty settlement entities: Ngāti Hineuru, Ngāti Pāhauwera, Ahuriri Hapū and Ngāti Tūwharetoa.

Mohaka is said to have been the name of a river or stream in Hawaiki.

Ngāti Hineuru

Ngāti Hineuru has a strong cultural, spiritual, historical, and traditional association with the Upper Mohaka River. The River is one of the iwi's most important taonga and there are numerous settlements and sites of significance (Deed of Settlement).

Ngāti Hineuru's rohe focused on the upper Mohaka valley and a rich area of forest further inland. Their traditional boundaries are defined by rivers and mountains; the Mohaka, Te Hoe, and Waipunga rivers tend to be highlighted. Their main villages were at Waiparati, Te Haroto, Tarawera and Runanga.

Although in a mountainous region lying across the main divide, Hineuru's rohe was a strategic position as it lay across the main access routes from Hawke's Bay to Taupō, Rotorua and the Bay of Plenty. Prior to the confiscations in the 1860's, the District Land Purchase Commissioner noted that there was a major Māori route running inland from Hawke's Bay to Taupō. This was the Waipunga River down to Tarawera, to the Mohaka and across the Titiokura saddle to the Kaiwaka and Waiohingaanga (Esk) rivers. The route was also used frequently by early European travellers and traders.

Traditionally, they had many pā, kāinga, cultivations, mahinga kai and urupā – many listed by people in Waitangi Tribunal evidence as being used in remembered history and since 1840. The landscape is a culturally dense one loaded with a wealth of place names and remembered events.

Ngāti Pāhauwera

The Mohaka River is significant to Ngāti Pāhauwera as taonga and the mauri of their spiritual and material wellbeing. It was significant as a highway, provider of mahinga kai and other resources important for cultural and commercial reasons. It was a traditional area of residence, urupā, places of spiritual and cultural significance.

Ngāti Pāhauwera's traditional tribal territory is from the Te Hoe river junction to its mouth.

Te Heru o Tureia (Historic Reserve) is near the Mohaka River and is of paramount importance as a kāinga, mahinga kai and the burial place of high-ranking Ngāti Pāhauwera ancestors, including Te Kahu o Te Rangi.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

Ahuriri Hapū

Ahuriri Hapū also state a cultural, spiritual, historical, and traditional association with the Mohaka River. Like the Upper Ngaruroro, it was a key transport route inland and it has been a significant marker of land interests from ancient times (Deed of Settlement).

The upper Mohaka River contained renowned eeling grounds and Ahuriri Hapū established transient camps there during the eeling season.

Ngāti Tūwharetoa

Ngāti Tūwharetoa have a strong affiliation with the Upper Mohaka River, which results in a special relationship with Ngāti Pāhauwera because the river is shared by both.

2. Spiritual Values

Many people who gave evidence in the various Waitangi Tribunal inquiries spoke about the sacralised qualities of this interior landscape, especially of the rivers (notably the Mohaka, Waipunga, Hauturu and Te Hoe).

The Mohaka River provided drinking water, was a source of spiritual cleansing, and was considered to have healing properties. It was used for the healing of women after they had given birth, used for the washing of Tupapaku and was an important part of the ta moko process.

Mangatutu Hot Springs and Mangatainoka Hot Springs located in the upper reaches of the Mohaka River have been used since the beginning of Māori occupation. They were of special significance to the early Māori.

3. Wāhi tapu, wāhi taonga, wai tapu

Orangikapua was a kāinga and wāhi tapu, located on the Mohaka River very near to its junction with the Ripia River. According to traditional sources there were people killed here, and it was the site of a large cemetery.

4. Mahinga kai

Hineuru kaumatua describe the wealth of resources provided by the Mohaka River. It was significant as a mahinga kai resource, the river was plentiful with fish species tuna, trout and koura. The forest around the Mohaka River was very dense and provided many important resources including harakeke, toitoi, birdlife and a range of plants used for medicinal purposes. Hineuru people hunted on all over Waitara block until the native bush was cleared in recent years and took eels from the streams that ran into the Mohaka.

The rivers and their beds did not only provide kai - a range of stones were highly prized, especially for hangi stones. Stones were also used for paths, anchors, weapons, tools, walls and tuahu. Shingle and sand were used for seed raising, improving drainage and retaining heat loss in soils. Three types of volcanic stone were found in the Mohaka River. Taupanga, (a speckled greyish rock used for hangi), Opunga, (a "whitish rock used for hangi and adzes"); Kowhatu Makauri a blue stone (used for adzes and patu, and hangi). Hangi stones were an important resource which were gathered and used to heat dwellings as well as to cook food.

Te Wero o Maru is a Pā tuna on the Mohaka and Hinaki o Kotihe and Hinaki o Kotene are places where eel traps were set.

The Ripia River was utilised as a mahinga kai.

Ngāti Hineuru had an agreement with Ngāti Pāhauwera which allowed them to fish at the river mouth at certain times when the kahawai were running. In return, Pāhauwera had access to hinterland areas when food on the coast was scarce. Hence the Ngāti Pāhauwera whakatauki: Tangitu ki te moana, maungaharuru ki uta.

5. Pā, Kāinga, ara

Hineuru had settlements and a number of significant historical pā, kāinga sites, wāhi tapu along the Mohaka River, and it was used as a key transport route inland.

Archaeologists suggest that until the early or mid nineteenth century the population was relatively dense with competition for resources necessitating defenses around living areas and food storage pits and/or the location of sites hidden or difficult access places. Many settlements on the Mohaka were in proximity to routes and crossings.

An archaeological survey by Bain (1992) notes that:

....between Kakariki and Te Hoe indicate a clear pattern of settlement associated with known river crossings. Where the Mohaka River can be crossed, settlement is concentrated, and it was sparse in the intervening areas although the landscape might suggest suitable sites.

One of the principal routes taken by tribes entering the Mohaka Catchment from the north was via the Hautapu stream that runs into the Te Hoe River. The routes that travellers could take from the Mohaka and Te Hoe confluence included:

- Follow the Mohaka downstream to Mohaka and the sea
- Follow the river downstream to Kakariki then cross to follow the trail to Wairoa
- Climb the Maungaharuru to Pohokura and descend to Tutira
- Follow the Mohaka upstream and cross over Titiokura or Ranga a Tawhao near Puketitiri
- Cross the Mohaka and take a number of different routes inland

Orangikapua was a kāinga and wāhi tapu, located on the Mohaka River very near to its junction with the Ripia River. According to traditional sources there were people killed here, and it was the site of a large cemetery.

6. Rohe boundary

The Mohaka River has been used as a significant boundary marker to define areas of interest.

Ngāti Hineuru's traditional boundaries are defined by rivers and mountains: in this respect Titiokura, Maungaharuru, and the Mohaka, Te Hoe, and Waipunga rivers tend to be highlighted.

The Ripia River was a boundary between the Te Matai block and the Tarawera block, which are both of importance to Hineuru.

7. Archaeology

Figure 1: Archaeological sites in the Upper Mohaka

8. Statutory Acknowledgement Areas of Interest

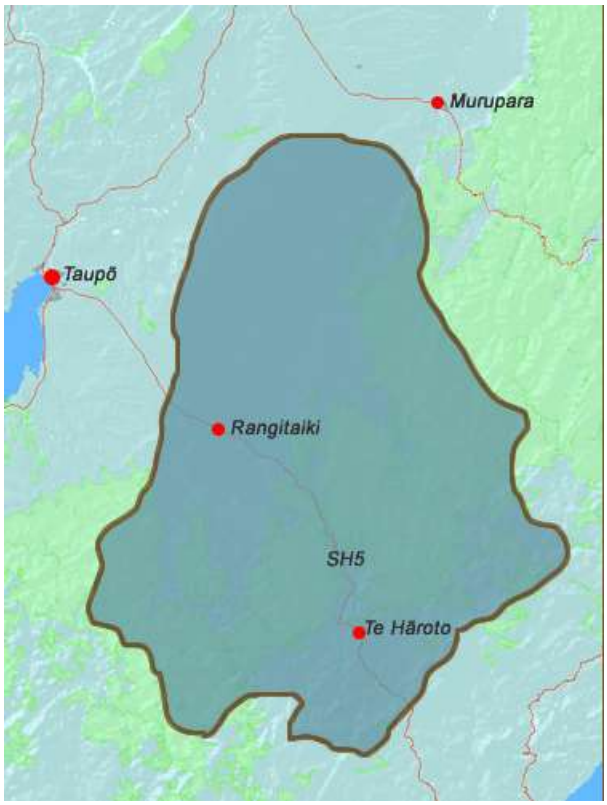

Figure 2: Ngāti Hineuru Area of Interest

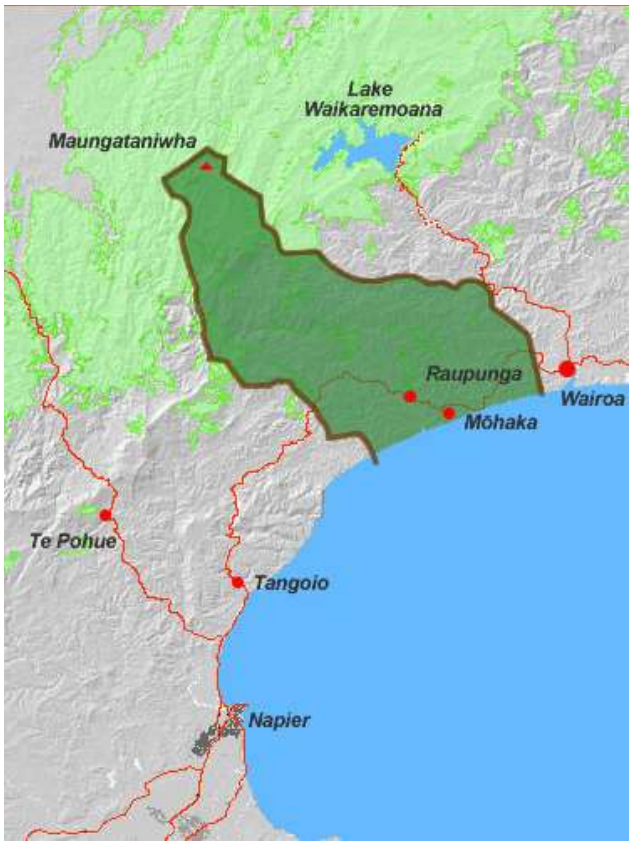

Figure 3: Ngāti Pāhauwera Area of Interest

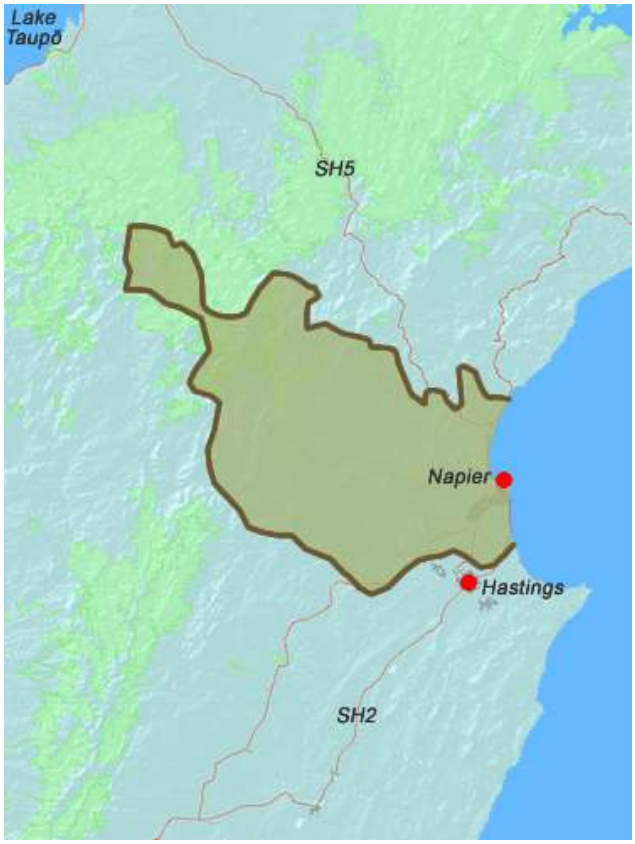

Figure 4: Ahuriri Hapū Area of Interest

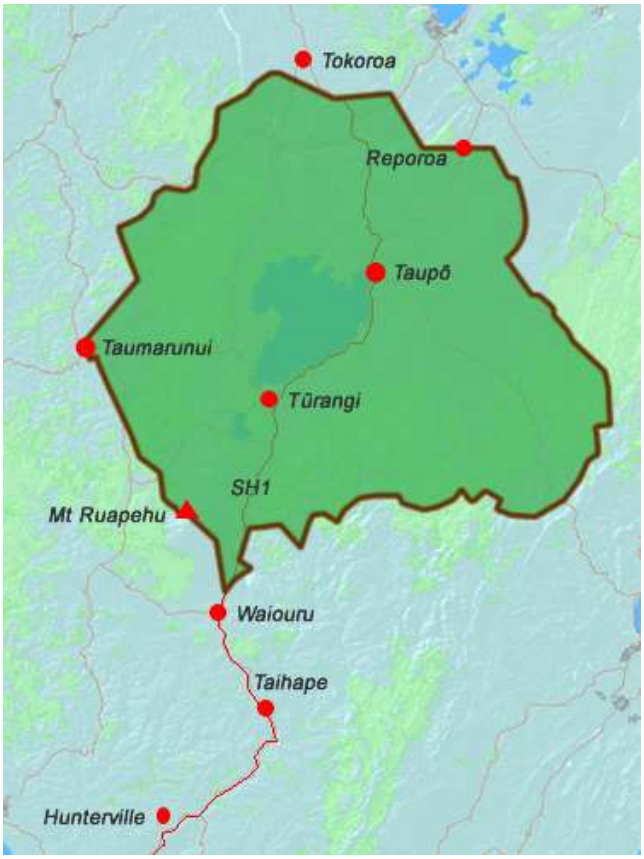

Figure 5: Ngāti Tūwharetoa Area of Interest

9. Resource Management Plans

The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to the Upper Mohaka River. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Regional Resource Management Plan
Specific water quality standards apply to the Mohaka River • 50 Faecal Coliforms (cfu/100ml) • 10 Suspended Solids (mg/l)
Catchments Sensitive to Animal Effluent Discharges (Schedule 6b)
Rivers Considered for Riparian Protection (Schedule 8)

Regional Coastal Environment Plan
Specific water quality standards apply to Mohaka River Catchment • 50 Faecal Coliforms (cfu/100ml) • 10 Suspended Solids (mg/l)

Attachment 2: Photographs - Upper Mohaka River

Upper zone - Mohaka River

Downstream of the Taharua Confluence

Mohaka River

Mohaka River

Lower Ngaruroro River (below Whanawhana)

Key Cultural Values
Spiritual values
Wāhi Tapu, wāhi taonga, wai tapu
Mahinga kai, Pā tuna
Pā, Kāinga
Rohe boundary

Table 1: List of documents reviewed

Year	Name	Author
2004	Wai 201: The Mohaka ki Ahuriri Report	The Waitangi Tribunal
2009/ 2012	Ngāti Hori Freshwater Resources Management Plan: Operation Patiki	Ngāti Hori
2012	Submission from Te Taiwhenua o Heretaunga on Proposed Plan Change 5 to the RPS	Te Taiwhenua o Heretaunga
2014	Whakatu Arterial Link, Hawke's Bay: Archaeological Assessment	Simon Bickler and Rod Clough
2015	An Application to the Minister for the Environment for a Water Conservation Order on the Ngaruroro River and Clive River	Catalyst Group
2015	Environment Court Decision: NKII vs HBRC	Environment Court
2015	Mana Ake - Nga Hapu o Heretaunga – An Expression of Kaitiakitanga	Te Taiwhenua o Heretaunga
2016	Heretaunga Tamatea Deed of Settlement documents	Heretaunga Tamatea and the Crown
2016	Ahuriri Hapū Deed of Settlement	Ahuriri Hapū and the Crown
2016	Ngaruroro Values and Attributes Report	
2018	Cultural Values Table	Hawke's Bay Regional Council

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the lower Ngaruroro River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the cultural values attributed to the lower Ngaruroro River in those documents referred to in Table 1, above. For clarification, the lower Ngaruroro River has been identified as potentially outstanding for the cultural value set only. In accordance with decisions made by the RPC in May 2018, this report does not discuss the recreation, landscape and ecology values associated with the lower Ngaruroro River.
3. The report summarises the values into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all of the waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.
4. Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Overview

5. The lower Ngaruroro River is culturally significant for the people of Heretaunga Tamatea.
6. The full name of the river is Nga-ngaru-o-nga-upokororo-mai-i-mokotuararo-ki-Rangatira after an incident in which a dog belonging to the ancient deity Mahu startled some small fish known as upokororo. As the shoal of fish dashed away they caused ngaru, or ripples in the water.
7. The lower Ngaruroro River was traditionally used as a natural highway from the coast to the mountains. There are many registered waahi tapu and archaeological sites along the river, including numerous pā and kāinga. Mahinga kai species of significance in the Ngaruroro catchment include tuna, pātiki, īnanga, koaro, koura, kakahi and marine wanderers (e.g. mullet, herrings and kahawai).
8. The TANK group has been progressing a cultural values framework, identifying values and attributes to characterise water quality.
9. Ahuriri Hapū also state a cultural, spiritual, historical, and traditional association with the Ngaruroro River.

Location

10. The Ngaruroro River runs for a total of 160 kilometres southeast from the Kaweka Range, Kaimanawa Range and Ruahine Range and then east before emptying into Hawke Bay roughly halfway between the cities of Napier and Hastings, near the town of Clive.
11. The lower Ngaruroro River is from Whanawhana downstream. From here, the river opens to wide braided channels and is joined by the Maraekakaho River. The Ngaruroro River shares a river mouth with the Tutaekuri, Clive River and Muddy Creek. The meeting of these rivers forms the Waitangi Estuary. The Ngaruroro River is one of several rivers that helped form the alluvial Heretaunga Plains.
12. The course of the Ngaruroro River has changed several times, originally flowing down what is now the Clive River. It changed to its present course in 1867 during a major flood. In 1969, the bottom 4 km of river was diverted more directly to the coast in an effort to reduce flooding.
13. The extent of the lower Ngaruroro River and its catchment area can be seen in Figures 1 and 2.

Figure 1: Extent of lower Ngaruroro River

Figure 2: Ngaruroro catchment

*Cultural values **

Importance

14. The lower Ngaruroro River is significant for the people of Heretaunga Tamatea - one of six large natural groups negotiating the settlement of Ngāti Kahungunu Treaty of Waitangi claims.
15. The full name of the river is Nga-ngaru-o-nga-upokororo-mai-i-mokotuararo-ki-Rangatira after an incident in which a dog belonging to the ancient deity Mahu startled some small fish known as upokororo. As the shoal of fish dashed away they caused ngaru, or ripples in the water (Deed of Settlement).
16. Another name is Ngaru Roromoko Tuararo ki Rangatira giving the river eminence and association with the status of Rangatira (leaders/chiefs) (Ngaruroro Values and Attributes Report).
17. The waters of the Ngaruroro River are considered to be of outstanding cultural and spiritual significance by tāngata whenua. Mahinga kai (food sources), the presence of nohoanga (settlements), urupā (burial places), waahi tapu, traditional trails and other taonga are all important aspects of this (Ngaruroro Values and Attributes Report).
18. Ngāti Hori marae, Kohupatiki is located on the banks of the Clive River and is significant due to its connection to the Ngaruroro River. The river no longer flows over their lands as it once did but the people of Kohupatiki still recognise the pathway of the Ngaruroro River as running past their marae. Their mana resides where the Ngaruroro River once flowed (Ngaruroro Values and Attributes Report).
19. Ahuriri Hapū also state a cultural, spiritual, historical, and traditional association with the Ngaruroro River. It was a key transport route inland and to the west coast. It has also been a significant marker of land interests from ancient times (Deed of Settlement).

TANK Group

20. The TANK group has been working since 2012 on land and water management issues for the Tutaekurī, Ahuriri, Ngaruroro and Karamū catchments. Its purpose is to recommend limits and measures for a workable plan change. TANK's collaborative membership includes more than 30 groups, representing Tāngata Whenua, primary sector, councils and environmentalists.
21. The TANK group has been progressing a cultural values framework, identifying values and attributes to characterise water quality.

Spiritual Values

22. The ancestors of Ngāti Rahunga-i-te-rangi and Ngāti Poporo hapū held the river in such high esteem that they called it Te Awa o Te Atua- reflecting the importance of this taonga tuku iho (God-given treasure/gift), its spiritual whakapapa and origins.
23. The physical connections between the Ngaruroro River and the hapū who hold mana whenua over that resource have altered, but pepeha, whakatauki, oral traditions and waahi taonga preserve their spiritual associations and relationships with ancestral lands, water, sites, waahi tapu and associated taonga.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

Wāhi tapu, wāhi taonga

24. The following waahi tapu sites are identified in Hastings District Plan:

- W12 - Urupā
- W13 - Battlefield – Urupā
- W56 - Lake Omahu and Edges
- W57 - Puketapu - Battlefields, Old Pā, Sites, Burial Caves
- W58 - Lake, Swamp and Edges
- W59 - Urupā
- W66 - Lake and Edges, Burial Sites
- W67 - Lake and Edges, Burial Sites
- W110 – Pā Site

25. The location of these sites can be seen in Figure 3, below.

Figure 3: Waahi Tapu Sites in Hastings District Plan

Mahinga kai

26. The River was a significant food source, central to the well-being of Heretaunga Tamatea. Mahinga kai species of significance in the Ngaruroro catchment include tuna (eel), pātiki (black flounder), īnanga, koaro (whitebait), koura, kakahi and marine wanderers (e.g. mullet, herrings and kahawai).

27. Ngāti Upokoiri pā, located on a hill alongside the Ngaruroro River near Lake Runanga, is associated with Tamatea who trapped eels there and kept a pet koura in the spring nearby. A neighbouring spring is noted as a nursery for a particular type of eel.

Pā, Kāinga, ara

28. The lower Ngaruroro River was used as a natural highway from the coast to the mountains. There are a number of well-known sites along the river, such as Te Awapuni and Pokonao Kāinga (where Te Moananui and Karaitiana Takamoana lived), Pukerau the kāinga of Noa Huke, Tanenuiarangi the central gathering place of chiefs around the time of Pakeha contact, and Hautapu and Hautu and a river crossing known as Te Arawhata-a-Tikumu.

29. There were a numerous pā situated along the riverbanks. Particularly notable, is the ancient pā of Pākōwhai which was settled by Karaitiana Takamoana. The Repudiation Movement housed its printing press there for their newspaper, *Te Wananga* which was published from 1874 to 1878 (Deed of Settlement).

30. Ngāti Upokoiri pā is located on a hill alongside the Ngaruroro River near Lake Runanga. The pā was later reworked as a redoubt and towards the bottom of the hill are terraces and a pit. Nearby is an urupā, and across the river is another pā, kumara pits and house floor (Ngaruroro Values and Attributes Report).

31. Kohupatiki marae was established directly across the river from Tanenuiarangi pā during the 1860s by Te Waka Kawatini. The Tanenuiarangi pā was established sometime during the 1700s. The name of the meeting house on Kohupatiki marae is Tanenuiarangi. Ngāti Hori recently celebrated the 100 year anniversary of the whare nui.

32. In 1844 William Colenso set up his mission station at Waitangi which was situated at the Ngaruroro River mouth. The principal Māori settlement Te Awapuni was located to the north of Waitangi, across a stretch of water. Pareihe had established it on his return from Mahia (Wai 55 Report).

Rohe boundary

33. The Ngaruroro River has been a significant marker of land interests from ancient times. A pou once stood at Whanawhana which represents an important political demarcation between hapū, which remains significant (Deed of Settlement).

Archaeology

34. The archaeological sites located in close proximity to the lower Ngaruroro River are shown in Figures 4, 5 and 6, below.

Figure 4: Archaeological Sites on the lower Ngaruroro River – lower section

Figure 5: Archaeological Sites on the lower Ngaruroro River – upper section

Figure 6: Archaeological Sites on the lower Ngaruroro River – middle section

Statutory Acknowledgement Area of Interest

35. Figure 7 details the Heretaunga Tamatea Area of Interest.

Figure 7: Heretaunga Tamatea Area of Interest

Resource Management Plans

36. The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to the lower Ngaruroro River. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Iwi and Hapū Resource Management Plans
Kahungunu ki Uta, Kahungunu ki Tai: Marine & Freshwater Fisheries Strategic Plan
Mana Ake - An Expression of Kaitiakitanga, Te Taiwhenua o Heretaunga

Regional Resource Management Plan
Specific water quality standards apply to Ngaruroro River between Fernhill Bridge and Expressway Bridge • 100 Faecal Coliforms (cfu/100ml) • 25 Suspended Solids (mg/l)
Specific water quality standards apply to Ngaruroro River downstream of Expressway Bridge • 150 Faecal Coliforms (cfu/100ml) • 25 Suspended Solids (mg/l)
Minimum Flow and Allocatable Volumes for Specified Rivers • 2,400L/s at Fernhill Bridge
Heretaunga Plains unconfined aquifer (Schedule 5a)
Catchments Sensitive to Animal Effluent Discharges (Schedule 6b)
Minimum Flow Rivers (Schedule 7)
Rivers Considered for Riparian Protection (Schedule 8)

Regional Coastal Environment Plan
Specific water quality standards apply to Ngaruroro River downstream of Expressway Bridge • 150 Faecal Coliforms (cfu/100ml) • 25 Suspended Solids (mg/l)

Upper Ngaruroro River (above Whanawhana)

Key Values
Cultural
Recreation (angling, rafting, kayaking)
Ecology (wildlife, fisheries)
Natural Character
Landscape

Table 1: List of documents reviewed

Year	Name	Author
1966	An Encyclopaedia of New Zealand	T.L Grant-Taylor
1979	64 New Zealand Rivers	Egarr, Egarr & Mackay
1981	New Zealand Recreational River Survey	G & J Egarr
1982	Submission of the draft Inventory of Wild and Scenic Rivers of National Importance	Ministry of Agriculture and Fisheries
1984	The Relative Value of Hawke's Bay Rivers to New Zealand Anglers	Fisheries Research Division - N.Z. Ministry of Agriculture and Fisheries
1986	A List of Rivers and Lakes Deserving Inclusion in A Schedule of Protected Waters	Grindell & Guest
1988	Wildlife and Wildlife Habitat of Hawke's Bay Rivers	Department of Conservation
1994	Headwater Trout Fisheries in New Zealand	NIWA
1994	Hawke's Bay Conservancy – Conservation Management Strategy	Department of Conservation
1998	Wildlife and Wildlife Habitat of Hawke's Bay Rivers	Department of Conservation
2004	Potential Water Bodies of National Importance	Ministry for the Environment
2009	Angler Usage of Lake and River Fisheries Managed by Fish & Game New Zealand: Results from the 2007/08 National Angling Survey-NIWA	Martin Unwin

2009	The 21 best fly fishing spots	Stuff.co.nz
2010	Recreational Use of Hawke's Bay Rivers – Results of the Recreational Usage Survey 2010	Hawke's Bay Regional Council
2011	Ngaruroro River Flood Protection and Drainage Scheme – Ecological Management and Enhancement Plan	MWH consultants
2012	River Values Assessment System (RiVAS)	Lindis Consulting
2013	New Zealand Birds Online – The Digital Encyclopaedia of New Zealand Birds	Department of Conservation, Birds New Zealand, Te Papa Museum
2014	Jet Boating New Zealand – Rivers Information	Jet Boating New Zealand
2015	An Application to the Minister for the Environment for a Water Conservation Order on the Ngaruroro River and Clive River	Ngāti Hori ki Kohupatiki; Royal Forest and Bird Protection Society of New Zealand; New Zealand Fish and Game Council, Hawkes Bay Fish and Game Council, Jet Boating New Zealand, Whitewater NZ Incorporated
2015	Copy Supporting an Application for Water Conservation Order on the Ngaruroro River	Whitewater NZ
2015	The Ngaruroro, The forgotten river	River Valley
2016	New Zealand Geo-preservation Inventory	Geological Society of New Zealand
2016	Ngaruroro, Tutaekuri, Karamu River and Ahuriri Estuary Catchment – State and Trends of River Water Quality and Ecology	Hawke's Bay Regional Council
2017	Modelling Effects of Increased Groundwater Allocation on Stream Flows in the Heretaunga Plains	Hawke's Bay Regional Council
2017	Summary and Rebuttal Statement of Evidence of Dr Rachel McClellan - An Application for a Water Conservation Order for the Ngaruroro River and Clive River	Dr Rachel McClellan
2017	Pucker-up for New Zealand's native blue duck	Department of Conservation
2018	Ngaruroro River Trout and Fly Fishing	NZ fishing website
2018	Land Air Water Aotearoa (LAWA)	Hawke's Bay Regional Council
2018	Cultural Values Table	Hawke's Bay Regional Council

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the values of the upper Ngaruroro River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

2. This report presents the summarised findings of the values attributed to the upper Ngaruroro River (above Whanawhana) in those documents referred to in Table 1, above. As such, any values associated with the Ngaruroro River below Whanawhana are not discussed in detail in this report.

Overview

3. The Ngaruroro River is the largest river flowing across the Heretaunga Plains, rising on slopes of the Kaimanawa and Kaweka Ranges and flowing into the sea 160 km later near the town of Clive, where it shares a common river mouth with the Tutaekuri and Clive Rivers.

4. The upper reaches of the Ngaruroro River are surrounded predominately by native vegetation and are highly valued for their scenic, cultural, and recreational qualities. The upper river runs clean and clear and is particularly renowned for its salmonid angling, whitewater boating opportunities and its impressive scenery.

5. The full name of this river is Nga-ngaru-o-nga-upokororo-mai-i-mokotuararo-ki-Rangatira, with the river taking its name from an incident in which a dog belonging to the ancient deity Mahu startled some small fish known as upokororo. As the shoal of fish dashed away they caused ngaru or ripples in the water.

6. The lower section of the Ngaruroro River (below Whanawhana) has a strong hydraulic connection with the Heretaunga aquifer system which is a significant resource for Hawke's Bay. This area has significant cultural values which are discussed in a separate report relating to the cultural values of the lower Ngaruroro River.

7. In 2015, an application was made to the Minister for the Environment for a Water Conservation Order on the Ngaruroro and Clive Rivers. This application is currently being heard by a Special Tribunal with stage two hearings due to commence late 2018.

Location

8. The upper reaches of the Ngaruroro River are located approximately 80 km northwest of Napier on the east coast of the North Island. The Taruarau River is its main tributary.

9. The location and extent of the Ngaruroro River can be seen in Figures 1 and 2, below.

Figure 1: Location of the Ngaruroro River

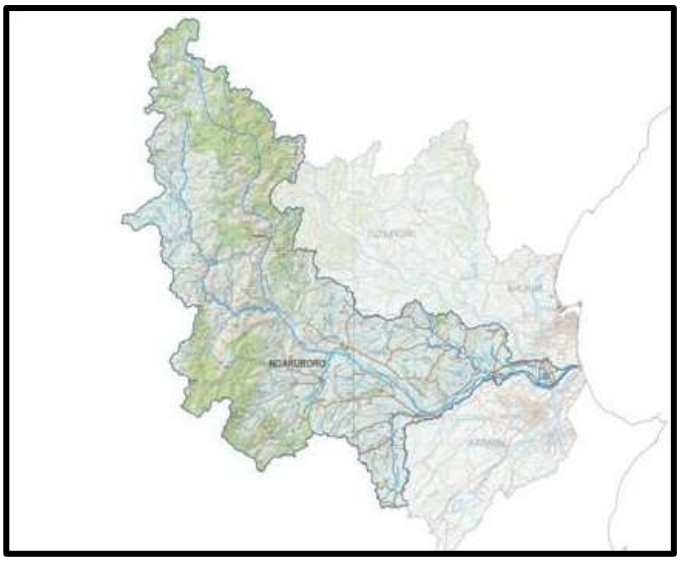

Figure 2: Extent of Ngaruroro River

*Cultural values **

10. The upper Ngaruroro is significant for the people of Heretaunga Tamatea. The waters are considered to be of outstanding cultural and spiritual significance. Mahinga kai (food sources), the presence of nohoanga (settlements), urupā (burial places), waahi tapu, traditional trails and other taonga are all important aspects of this.

11. The traditions of Ngāti Whitikaupeka, Ngāti Hauiti and Ngāti Apa tell how Tamatea (one of the great early explorers) went up the Ngaruroro River and across the upper Rangitīkei River into the Waiōuru and Taihape districts, where he stocked the Moawhango River with freshwater kōura (crayfish).

12. For Ahuriri Hapū, the upper Ngaruroro was a key transport route inland and it has been a significant marker of land interests from ancient times

13. The headwaters of the Ngaruroro River also have cultural, spiritual, and historic significance to Ngāti Tūwharetoa. This area is largely in its natural state, and is commonly expressed as being the heart of the Kaimanawa Ranges.

14. Attachment 1 contains a more detailed explanation of the cultural values associated with the upper Ngaruroro River, above Whanawhana.

Recreation values

15. The upper reaches of the Ngaruroro River are highly valued for angling and white water boating activities with several rafting companies operating in the area. Between Whanawhana and the Taruarau confluence the river is used by jet boats.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

16. The recreational activities associated with the Ngaruroro River have been discussed in a number of nationally published documents over the last 40 years and are generally described as being of exceptional value, nationally important and outstanding.

17. The recreational activities which take place on the Ngaruroro River are discussed in more detail below.

Angling

18. The headwaters of the Ngaruroro River are classed as a wilderness trout fishery, particularly valued for its impressive scenery and large trout. The upper reaches are dominated by rainbow trout, with a smaller number of brown trout present in this part of the river. The average weight of trout is around 1.5 kg, with many in excess of 4 kg.

19. The Ngaruroro headwaters are renowned amongst the fishing community for the chance to catch trophy size fish in a near natural environment. This area is difficult to access and anglers need to spend several days walking in along tracks or via helicopter.

20. Drift diving undertaken over the years, indicates that the density of large trout in the upper Ngaruroro River is somewhere between 10 and 14.5 large rainbow trout per km. In 1990 as part of a national trout assessment, the upper Ngaruroro River was recorded as containing the 8th equal highest trout density out of the 57 reaches assessed over 24 rivers.

21. In 1982, The Ngaruroro River (above Whanawhana) was identified by the Ministry of Agriculture and Fisheries as being a nationally important wilderness river fishery.

22. In 1984, the Fisheries Research Division classified the Ngaruroro headwaters as a nationally important wilderness river fishery, noting its outstanding characteristics as scenic beauty, solitude, large area of fishable water and large trout.

23. In 1986, the Government released a finalised list of rivers and lakes with outstanding wild, scenic, recreational or other natural characteristics that should be protected. The Ngaruroro River (above Whanawhana) was placed in 'Group Two[1]' for its scenic and recreation qualities specifically noting the important trout fisheries contained in its upper reaches. The Ngaruroro River was only excluded from Group 1 due to its close proximity to the Mohaka River.

24. In 1994, The Ngaruroro River was identified by NIWA as a Category A headwater trout fishery which contains trophy trout and fishes well all season. There are a total of eighteen Category A headwater fisheries in the North Island with eighty one in New Zealand overall.

25. In 2004, The Ngaruroro River was recognised as a Potential Water Body of National Importance for recreation by the Ministry for the Environment.

26. In 2012, the Hawke's Bay RiVAS assessments for salmonid angling concluded the Ngaruroro River (above Taruarau River confluence) was nationally significant, and the Ngaruroro River (below Taruarau River confluence) was regionally significant, for salmonid angling.

Boating

27. The upper Ngaruroro River is high valued for its impressive wilderness scenery and its wide range of white water boating opportunities, with several commercial rafting and canoeing organisations operating in this area. During summer, parts of the river are subject to low flows and are not suitable for rafting.

28. The upper Ngaruroro River provides for a range of whitewater experiences, from multi day rafting/kayaking trips through remote backcountry to single day trips through spectacular gorge scenery. The Ngaruroro River has predominately Class 2 and 3 rapids with several Class 4 rapids.

29. Access to the most upper parts of the river (in the Kaweka Ranges above the Napier–Taihape Road) is difficult and requires helicopter access. This section has impressive wilderness scenery flowing through

[1] Group One = Excellent rivers or lakes containing an outstanding cultural, fisheries, wild flora, location, recreation, scenic, scientific, tourism, wildlife habitat, value(s). Group One contains the very best examples of these values. Group Two = Contains examples of water bodies whose values better represented by the rivers or lakes in group one. Group Three = those water bodies who may deserve to be in first or second group, but there was inadequate information.

consistently Grade 2 and 3 rapids making its way through mixed Beech and Kanuka forest. This section of river is described as an excellent wilderness trip for experienced canoeists.

30. The section below this reach includes the Ngaruroro Gorge, running from the Napier-Taihape Road for around 50 km. The Ngaruroro Gorge is described as an exciting Grade 3 and 4 challenge requiring experienced canoeists and skilled rafters. It is considered to be one of the top 8 whitewater kayaking runs in the North Island. From the bottom of the Ngaruroro Gorge to Whanawhana the river eases to Class 2 and then Class 1 water.

31. The section between the Taruarau River confluence and Whanawhana is navigable by jet boats, providing a 19 km stretch of water which is best boated during high flows. This section contains some difficult boating water which requires more advanced boating skills around boulders and through rapids.

32. In 1981, The New Zealand Recreational River Survey assigned the recreational and scenic values of the upper Ngaruroro catchment 'high[2]' and 'impressive[3]' rating, respectively; with the recreational and scenic values of the Ngaruroro Gorge rated 'exceptional' and 'impressive', respectively.

33. In 1986, The Ngaruroro River was placed in 'Group two'[4] in the Government's list of rivers and lakes deserving protection for its scenic and recreation qualities, with specific note given to its rafting and canoeing values. The Ngaruroro River was only excluded from Group 1 due to its close proximity to the Mohaka River.

34. In 1991 a River Use Survey was conducted by the NZ Canoeing Association to determine the relative values of the top 200 kayaking runs in New Zealand. The survey found the section of river above Kuripapango was ranked as the 16th most important run in New Zealand (8th in the North Island), and the lower gorge from Kuripapango to Whanawhana was ranked 30th in New Zealand (13th in the North Island).

35. In 2004, The Ngaruroro River was recognised as a Potential Water Body of National Importance for recreation by the Ministry for the Environment. The report noting the canoeing and rafting activities which take place on the river.

36. In 2012, Hawke's Bay RiVAS assessments for whitewater kayaking concluded the upper Ngaruroro River was nationally significant for whitewater kayaking.

37. In 2014, Jet boating New Zealand classified the section of the Ngaruroro River between the Taruarau River confluence and Whanawhana, as a 'Class 2' jetboating trip, on a shingle river with boulders and rapids, requiring more advanced boating skills.

Ecology values

38. The upper Ngaruroro River above Whanawhana is recognised as having important ecological values with the upper waters in a near natural state.

39. In 2004, the Ngaruroro River was identified as a Potential Water Body of National Importance for aquatic biodiversity values by the Ministry for the Environment.

Fish

40. Three species of native fish are present in the upper Ngaruroro River, being the longfin eel, torrentfish and, koaro all of which are classified as being 'at risk and declining in this river or in general'. Koura (freshwater crayfish), brown trout and rainbow trout are also present in this section of river.

41. The upper Ngaruroro River provides a highly valued habitat for both native and introduced fish species. In particular, the habitat is largely natural with near pristine water quality. The upper river supports good populations of torrentfish, longfin eel and rainbow trout.

42. Trout populations in the upper Ngaruroro River are self-sustaining, with trout spawning occurring in the Ngaruroro River and a number of its tributaries.

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[2] Recreational values graded on a five point scale: insignificant, low, intermediate, high, exceptional

[3] Scenic values graded on a six point scale: dull, uninspiring, moderate, picturesque, impressive, exceptional.

[4] Group One = Excellent rivers or lakes containing an outstanding cultural, fisheries, wild flora, location, recreation, scenic, scientific, tourism, wildlife habitat, value(s). Group One contains the very best examples of these values.

43. In 2012, the River Values Assessment System (RiVAS) was used to assess the significance of rivers in Hawke's Bay for native fish. The RiVAS assessment determined the Ngaruroro catchment was nationally significant for native fish. The RiVAS assessment was not limited solely to the Ngaruroro River and included the greater catchment area.

Wildlife

44. Three species of endemic birds are present along the upper Ngaruroro River being the globally endangered blue duck (whio) and the New Zealand Fernbird and Pipit, both of which are classified as 'at risk and declining'. Whio are extremely rare, more so than the kiwi with around 23 kiwi for every whio.

45. The upper Ngaruroro River is recognised as being a significant wildlife habitat for the blue duck, supporting almost 2% of the national population. In 2017, the estimated blue duck population of the upper Ngaruroro River was agreed to be around 50 birds.

46. In 2010, the total national population of Whio was around 2,500-3,000 individuals with a maximum of 1,200 pairs. In 2011, the breeding population estimates were revised to less than 1000 pairs.

47. The nationally critical grey duck may also be present in the upper Ngaruroro reaches. In 1967, a wildlife survey recorded grey ducks as being present on the river, however no recent surveys have been undertaken to confirm whether pure bred grey ducks are in fact present in the upper reaches, and further investigations are needed.

48. In 2012, the Ngaruroro River was identified as regionally significant in the Hawke's Bay RiVAS assessments for native birdlife.

Macroinvertebrates

49. Hawke's Bay Regional Council and NIWA regularly monitor the freshwater ecology of the upper Ngaruroro River at the following sites (see Table 2). The macroinvertebrate measures in Table 2 are an indicator of stream health where generally, the higher the Macroinvertebrate Community Index, taxa richness and percent EPT, the better the health of the stream.

50. The monitoring site at Kuripapango (NIWA) is upstream of the Whanawhana site (HBRC). The Kuripapango monitoring site is surrounded predominately by forest areas. Between Kuripapango and Whanawhana is the confluence with the Taruarau River, the Omahaki Stream and the Mangarakau stream. Farming occurs in the Ngaruroro catchment between the two monitoring sites.

51. The monitoring results show there is a slight difference in water quality and MCI between Kuripapango and Whanawhana, with the ecological health of the Ngaruroro River at Kuripapango in excellent condition. While the monitoring site at Whanawhana has a slightly lower MIC than Kuripapango, the ecological health of the Ngaruroro River at this location is still good, but not quite as pristine.

Table 2: Macroinvertebrate sampling results – upper Ngaruroro River (2011 - 2016)

Monitoring site	Macroinvertebrate Community Index (MCI)	Classification	Taxonomic richness	Percent EPT[5] richness
Kuripapango	MCI > 120	EXCELLENT	-	56.7%
Whanawhana	MCI between 116 and 121	GOOD	22	54.2%

Note: Regional Councils use a classification from Stark & Maxted (2007) for MCI sampling, assigning a rating of either excellent, good, fair or poor for ecological health and/or habitat condition.

Landscape /scenic values

52. The scenic values of the Ngaruroro River have been discussed in a number of nationally published documents over the last 40 years, with the upper reaches described as stunning wilderness scenery.

53. The upper Ngaruroro River flows through a variety of landscapes with the headwaters running through a vast area of tussock and scrubland. The river is initially relatively small as it flows over a shallow shingle bed

[5] EPT stands for Ephemeroptera (mayfly), Plecoptera (stonefly) and Trichoptera (caddisfly), and are macroinvertebrates which are sensitive to water pollution.

before passing through narrow valleys and smaller gorge areas covered in tussock, scrub and native bush vegetation. The river slowly increases in size as more and more streams join its flow.

54. From Kuripapango, the river flows into a narrow rocky gorge which is enclosed in parts by vertical schist walls on both sides, and contains numerous rapids. The landscape surrounding the gorge is native bush and scrub land. The river flows in and out of confined gorges until it meets the Taraurau River, its main tributary. Below the Taraurau River confluence, the river flows more quietly over a shingle bed until it reaches Whanawhana.

55. In 1979, the upper sections of the Ngaruroro River were given an 'impressive'[6] scenic rating in "64 New Zealand Rivers" which contains an in-depth scenic evaluation of sixty four of New Zealand's major Rivers.

56. In 1981, The New Zealand Recreational River Survey assigned the scenic values of upper sections of the Ngaruroro River an ''impressive'[7] rating.

57. In 1986, The Ngaruroro River was placed in 'Group two[8]' in the Government's list of rivers and lakes deserving protection, for its wild, scenic and recreation qualities. The Ngaruroro River was only excluded from Group 1 due to its close proximity to the Mohaka River.

58. Photographs of the upper Ngaruroro River above Whanawhana are contained in Attachment 2.

Geological features

59. The Ngaruroro Gorge is steep sided, deeply incised gorge, which contains a convoluted river that meanders at a depth of around 400 m through greywacke mountains.

60. The National Geo-preservation Inventory, which identifies and ranks geological features according to their relative significance, classifies the Ngaruroro Gorge as regionally significant, specifically recognising the gorge as being one of the two best gorges in Hawke's Bay.

Naturalness/intactness of waterbody

61. The Ngaruroro River is widely recognised as being in a near natural state upstream of Kuripapango. There are very few development influences in surrounding area, with the exception of forestry, which when harvested may impact on the river's water quality.

62. In 2012, the Ngaruroro River was identified as nationally significant in the Hawke's Bay RiVAS assessments for natural character.

Water Quality

63. Hawke's Bay Regional Council and NIWA regularly sample the water quality of the upper Ngaruroro River at the following locations (see Table 3). The nitrate and ammonia attribute bands provide an indication of the chronic toxicity risk to aquatic animals.

64. The monitoring results show that the upper Ngaruroro River has excellent water quality which is in a near pristine condition. All sites have an extremely low level risk of nitrate and ammonia toxicity for aquatic species.

65. Of particular note is water quality in the Ngaruroro River at Kuripapango. At this site, water quality regionally ranks 1st for nutrient concentrations, 2nd for water clarity, and is in the top 5 for low faecal indicator bacteria, overall suitability for contact recreation and biological health[9].

[6] Scenic values graded on a five point scale: dull, ordinary, interesting, impressive, exceptional.

[7] Scenic values graded on a six point scale: dull, uninspiring, moderate, picturesque, impressive, exceptional.

[8] Group One = Excellent rivers or lakes containing an outstanding cultural, fisheries, wild flora, location, recreation, scenic, scientific, tourism, wildlife habitat, value(s). Group One contains the very best examples of these values.

[9] A total of 77 sites (over 35 rivers) are monitored across New Zealand as part of the National Rivers Water Quality Network (NRWQN) measured by NIWA.

Table 3: Water quality – Ngarururo River (2016)

Monitoring site	Water clarity	Nitrogen	Phosphorus	Microbiological Indicator (*E. coli*)
Kuripapango	Turbidity = 0.97 NTU; Black disk = 5.7 metres. Both within the best 25% of like sites within New Zealand.	NOF BAND A Total Nitrogen = 0.045 g/m3; Total Oxidised Nitrogen = 0.006 g/m3 (Annual median) and 0.0275 g/m3 (95th percentile); Ammoniacal Nitrogen = 0.002 g/m3 (Annual median), 0.0047 g.m3 (annual maximum) All in the best 25% of like sites within New Zealand.	Dissolved Reactive Phosphorus, and Total Phosphorus are within the best 25% of 'like' sites within New Zealand. Dissolved Reactive Phosphorus = 0.002 g/m3, Total Phosphorus =0.004 g/m3.	NOF Band A E. coli = 3 n/100ml (annual median) In the best 25% of like sites in New Zealand
Whanawhana	Turbidity = 2.55 NTU; Black disk = 2.57 metres. Black disk in the best 50% of like sites within New Zealand. Turbidity in the worst 50% of like sites within New Zealand.	NOF BAND A Total Nitrogen, and Total Oxidised Nitrogen are within the best 25% of like sites within New Zealand. Total Nitrogen = 0.055 g/m3; Total Oxidised Nitrogen = 0.016 g/m3 (Annual median) and 0.11 g/m3 (95th percentile); Ammoniacal Nitrogen is In the best 25% of like sites in New Zealand Ammoniacal Nitrogen = 0.0047 g/m3 (Annual median), 0.0156 g/m3 (annual maximum)	Dissolved Reactive Phosphorus, and Total Phosphorus are within the best 25% of 'like' sites within New Zealand. Dissolved Reactive Phosphorus = < 0.004 g/m3, Total Phosphorus = < 0.004 g/m3.	NOF Band A E. coli = 3 n/100ml (annual median) In the best 25% of like sites in New Zealand

Note 1: NOF BAND A for E.coli = water suitable for designed use with les 1% risk of infection from contact with water during activities with occasional immersion (such as wading and boating). Band A is suitable for swimming.

Note 2: NOF BAND A for Nitrogen = unlikely to be effects even on sensitive species.

Values Summary

Overarching Value	Sub-value	Description	Outstanding Yes/no	Comments
Cultural	TBC	TBC	TBC	TBC
Recreational	TBC	TBC	TBC	TBC
Ecological	TBC	TBC	TBC	TBC
Landscape	TBC	TBC	TBC	TBC
Natural Character	TBC	TBC	TBC	TBC

Attachment 1

Upper Ngaruroro River – Cultural Values Report

Key Values
Spiritual values
Wāhi Tapu, wāhi taonga, wai tapu
Mahinga kai, Pā tuna
Pā, Kāinga
Rohe boundary

Table 1: List of documents reviewed

Year	Name	Author
2004	Wai 201: The Mohaka ki Ahuriri report	The Waitangi Tribunal
2012	Submission from Te Taiwhenua o Heretaunga on Proposed Plan Change 5 to the RPS	Te Taiwhenua o Heretaunga
2015	WCO application on the Ngaruroro River and Clive River	Catalyst Group
2015	Environment Court Decision: NKII vs HBRC	Environment Court
2015	Mana Ake - Nga Hapu o Heretaunga – An Expression of Kaitiakitanga	Te Taiwhenua o Heretaunga
2016	Heretaunga Tamatea Deed of Settlement documents	Heretaunga Tamatea and the Crown
2016	Ahuriri Hapū Deed of Settlement documents	Ahuriri Hapū and the Crown
2016	Inventory of Values in the TANK Catchments of Hawke's Bay	Cawthron Institute
2016	Ngaruroro Values and Attributes Report	
2018	Cultural Values Table	Hawke's Bay Regional Council

1. Introduction *

Purpose

The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the upper Ngaruroro River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

This report presents the summarised findings of the cultural values attributed to the upper Ngaruroro River in those documents referred to in Table 1, above.

The report summarises the cultural values associated with the upper Ngaruroro River into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Importance

The upper Ngaruroro River is significant for the people of Heretaunga Tamatea - one of six large natural groups negotiating the settlement of Ngāti Kahungunu Treaty of Waitangi claims.

The full name of the river is Nga-ngaru-o-nga-upokororo-mai-i-mokotuararo-ki-Rangatira after an incident in which a dog belonging to the ancient deity Mahu startled some small fish known as upokororo. As the shoal of fish dashed away they caused ngaru, or ripples in the water (Deed of Settlement).

Another name is Ngaru Roromoko Tuararo ki Rangatira giving the river eminence and association with the status of Rangatira (leaders/chiefs) (Ngaruroro Values and Attributes Report).

The waters of the Ngaruroro River are considered to be of outstanding cultural and spiritual significance by tāngata whenua. Mahinga kai (food sources), the presence of nohoanga (settlements), urupā (burial places), waahi tapu, traditional trails and other taonga are all important aspects of this (Ngaruroro Values and Attributes Report).

The traditions of Ngāti Whitikaupeka, Ngāti Hauiti and Ngāti Apa tell how Tamatea (one of the great early explorers) went up the Ngaruroro River and across the upper Rangitīkei River into the Waiōuru and Taihape districts, where he stocked the Moawhango River with freshwater kōura (crayfish).

Most of the named cultural sites identified in the documents in Table 1 are located in the Lower Ngaruroro. This is also reflected in the density of registered archaeological sites and waahi tapu sites.

Ahuriri Hapū also state a cultural, spiritual, historical, and traditional association with the Ngaruroro River. For them, it was a key transport route inland and it has been a significant marker of land interests from ancient times (Deed of Settlement).

The headwaters of the Ngaruroro River have cultural, spiritual, and historic significance to Ngāti Tūwharetoa. This area is largely in its natural state, and is commonly expressed as being the heart of the Kaimanawa Ranges.

TANK Group

The TANK Collaborative Stakeholder Group has been working since 2012 on land and water management issues for the Tutaekurī, Ahuriri, Ngaruroro and Karamū catchments. Its purpose is to recommend limits and measures for a workable plan change. TANK's collaborative membership includes more than 30 groups, representing tāngata whenua, primary sector, councils and environmentalists.

The TANK Group has been progressing a cultural values framework, identifying values and attributes to characterise water quality.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

2. Rohe boundary

The Ngaruroro has been a significant marker of land interests from ancient times. A pou once stood at Whanawhana which represents an important political demarcation between hapū, which remains significant (Deed of Settlement).

3. Archaeology

Figure 1: Archaeological Sites in close proximity to the upper Ngaruroro River

4. Statutory Acknowledgement Area of Interest

Figure 2: Heretaunga Tamatea Area of Interest

Figure 3: Ahuriri Hapū Area of Interest

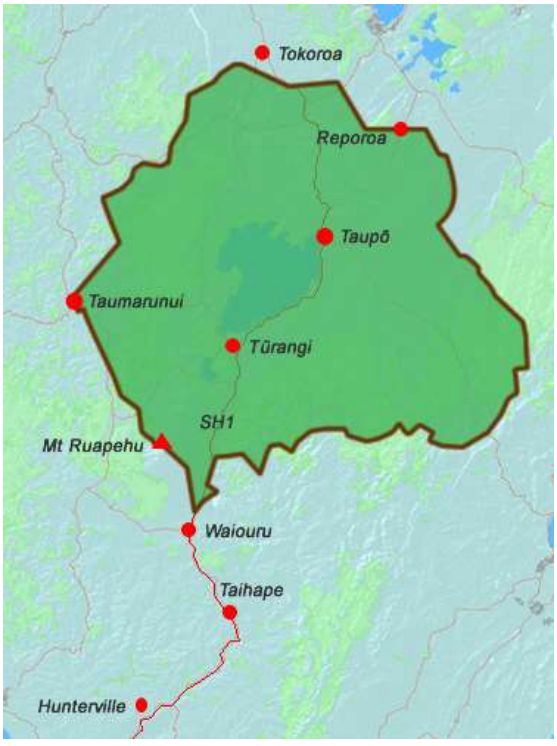


Figure 4: Ngāti Tūwharetoa Area of Interest

5. *Resource Management Plans*

The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to the upper Ngaruroro River. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Iwi and Hapū Resource Management Plans
Kahungunu ki Uta, Kahungunu ki Tai: Marine & Freshwater Fisheries Strategic Plan
Mana Ake - An Expression of Kaitiakitanga, Te Taiwhenua o Heretaunga

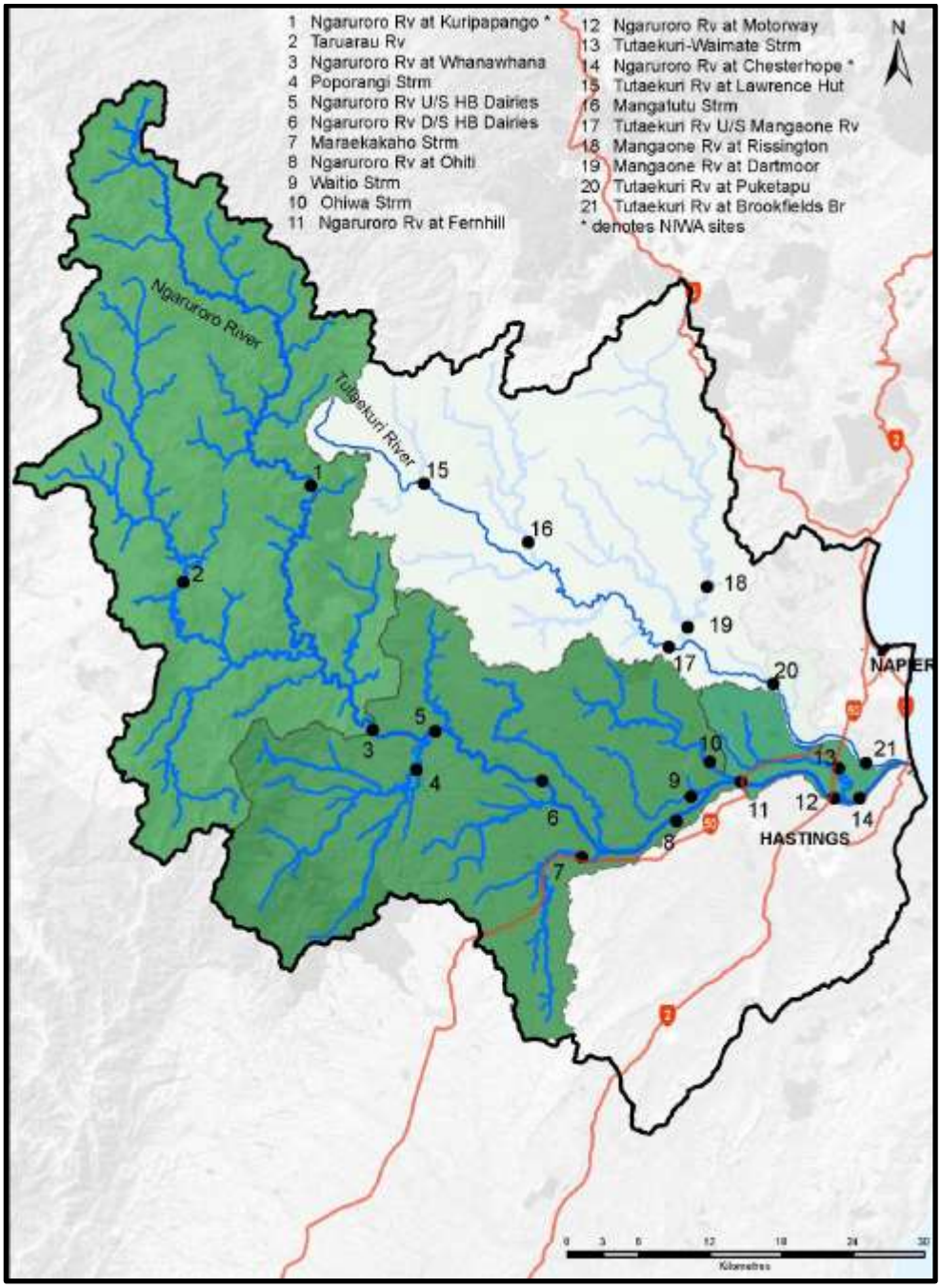
Regional Resource Management Plan
Specific water quality standards apply to Ngaruroro River upstream of Fernhill Bridge • 50 Faecal Coliforms (cfu/100ml) • 10 Suspended Solids (mg/l)
Minimum Flow and Allocatable Volumes for Specified Rivers • 2,400L/s at Fernhill Bridge
Catchments Sensitive to Animal Effluent Discharges (Schedule 6b)
Minimum Flow Rivers (Schedule 7)
Rivers Considered for Riparian Protection (Schedule 8)

Regional Coastal Environment Plan
Specific water quality standards apply to Ngaruroro River downstream of Expressway Bridge • 150 Faecal Coliforms (cfu/100ml) • 25 Suspended Solids (mg/l)

Attachment 2: Photographs – Upper Ngaruroro River

Upper Ngaruroro River

Upper Ngaruroro River



Ngaruroro River and tributaries

Pōrangahau River

Key Cultural Values
Wāhi Tapu, wāhi taonga
Mahinga kai, Pā tuna
Pā, Kāinga
Rohe boundary

Table 1: List of documents reviewed

Year	Name	Author
1992	Pōrangahau: The formation of an eighteenth-century community in southern Hawke's Bay	Angela Ballara
2003	Archaeology of the Wellington Conservancy: Wairarapa	Department of Conservation
2006	Areas of Significant Conservation Values: HB Coastal Marine Area	Hawke's Bay Regional Council
2012	Comments from Ngāti Kahungunu Iwi Incorporated on HBRC's Draft Change 5	Ngāti Kahungunu Iwi Incorporated
2016	Heretaunga Tamatea Deed of Settlement + Documents Schedule	Heretaunga Tamatea and the Crown
2018	Cultural Values Table	Hawke's Bay Regional Council

Discussion

*Purpose of report **

1. The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the Pōrangahau River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the cultural values attributed to the Pōrangahau River in those documents referred to in Table 1, above. For clarification, the Pōrangahau River has been identified as potentially outstanding for the cultural value set only. In accordance with decisions made by the RPC in May

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

2018, this report does not discuss the recreation, landscape and ecology values associated with the Pōrangahau River.

3. The report summarises the values into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

4. Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Overview

5. The Pōrangahau River is culturally significant for the people of Heretaunga Tamatea and in particular Ngāti Kere. The cultural associations of this area extend back to the arrival of the famed chief Pōrangahau. The river is known locally to Māori as the Tāurekaitai River.

6. The Pōrangahau estuary and river were important pre-European settlements. Rich in archaeological sites, the area provided the first authenticated records of moa hunter occupation in the North Island. Vast shell middens are situated in the dune systems, and pā sites occur at either end of the estuary. At various times the people of Pōrangahau built and occupied at least 19 pā.

7. The Pōrangahau Estuary is listed as an Area of Significant Conservation Value by Hawke's Bay Regional Council. This also identifies significant cultural values around mahinga kai sites and states that 20 fishing sites existed between Pōrangahau township and the sea. The estuary continues to be an important source of flatfish, kahawai, eels and whitebait for tangata whenua.

Location

8. The Pōrangahau River runs 35 km through southern Hawke's Bay. The river winds through rugged hill country to the north of Cape Turnagain, reaching the Pacific Ocean close to the township of Pōrangahau. It has a total catchment area of 697 km^2.

9. The extent of the Pōrangahau River and its catchment area can be seen in Figures 1 and 2, below

Figure 1: Extent of Pōrangahau River

Figure 2: Pōrangahau Catchment

Cultural values

Importance

10. Pōrangahau and its river was an important site of Māori settlements. The Pōrangahau River is known locally to Māori as the Tāurekaitai River:

'Ko Awapūtahi te maunga, Ko Tāurekaitai te awa, ko Ngāti Kere te hapū'

11. Tāurekaitai is a significant waterway for Heretaunga Tamatea which lies at the heart of their spiritual and physical wellbeing. The river has significance as a boundary and as a food gathering source.

12. As outlined in the Heretaunga Tamatea Deed of Settlement (DOS), the cultural associations of this area extend back to the arrival of the famed chief Pōrangahau. This association passes on to his great grandson, Te Aomatarahi, and to his great grandson, Te Angiangi.

13. Angela Ballara, in a paper based on her thesis 'The origins of Ngāti Kahungungu', researched eighteenth century communities in this area. The paper notes:

    Pōrangahau was a fortunate community. Its people had something of everything. Near the coast the Pōrangahau River became a lagoon, rich in freshwater and salt water species according to the tide and season. There were fishing villages associated with the community on various parts of the coast. They had much swampy ground, a source of birds, eels, and useful plants such as raupō. The river was navigable for miles inland, and a network of streams criss-crossed their territory, providing an abundance of suitable locations for eel weirs. The forest inland was a source of timber for all purposes, and of other resources such as birds, native rats, berries and wild vegetables.

Spiritual Values

14. Herangi is a mountain haunted by supernatural beings.

15. On the southern bank of the river is Opiango, a peak sacred to Ngāti Pīhere on which a pā was located.

Wāhi tapu, wāhi taonga, wai tapu

16. Taikura Rocks are wāhi tapu.

17. Wāhi tapu or burial grounds are located at Pukekaihou, Pouawatea, Pōrangahau, and Kai whi-tikitiki. Hēnare Matua named 35 people buried together there and indicated that there were many others; they belonged to the three main hapū of the community. There were also some deceased Ngāti Pakiua.

Mahinga kai

18. Ballara suggests that eighteenth-century Hawke's Bay people were highly mobile, moving between resource areas. The resources were mostly gathered and processed where they occurred but they may have been stored for winter in a kāinga or pā.

19. In one month pipi were collected and kahawai harvested at the best locations for these resources. At another, the people moved inland perhaps to plant kūmara and other crops on some sunny northward facing slope best suited to horticulture. At other times the pigeons and berries were at their best, and they moved into temporary camps in the forest areas to exploit both. The next month might be the kelp season on the coast. The following year they would repeat the whole round of planting, gathering, harvesting and processing the different resources.

20. Hēnare Matua (nineteenth century Ngāti Kahungunu leader and politician), in evidence to the Native Land Court, gave the names of many pā and settlements around Pōrangahau. He also named various cultivations, sources of fern root, places where birds and rats were taken, karaka groves and sources of raupō. He identified nine pā tuna and indicated that there were many others shared by Ngāti Kere, Ngāti Manuhiri and Ngāti Hinetewai.

21. The Pōrangahau Estuary is listed as an Area of Significant Conservation Value by Hawke's Bay Regional Council. This also identifies significant cultural values around mahinga kai sites and states that 20 fishing sites existed between Pōrangahau township and the sea. The estuary continues to be an important source of flatfish, kahawai, eels and whitebait for tāngata whenua.

Pā, Kāinga, ara

22. Ballara states that at various times the people of Pōrangahau built and occupied at least 19 pā. Some of these were occupied by single hapū; others were shared by two hapū or used in common.

23. On the southern bank of the river is Opiango, a peak sacred to Ngāti Pīhere on which a pā was located.

24. A pā named Pipitawai on a small spit of land running between the river and the coast called Puketauhinu.

25. Between the river mouth and the current village of Pōrangahau, four riverside pā were once located. These were called Te Makahue, Te Manga, Oreorewaia and Kahotai.

26. Mangamaire was a place many canoes were made by Ngāti Kere and Ngāti Manuhiri; Kere's son Te Ahurangi had given the order for their construction.

27. Orākai-ō-roa was a place for making nets.

Conflict

28. Huatokitoki Stream flows through the Matai Moana Scenic Reserve. The land around Huatokitoki, including the reserve, was part of that gifted to cement a peace arrangement between Ngāti Kere and Ngāi Te Ao.

Rohe Boundary

29. The Deed of Settlement identifies that the river has always been a marker for land division. For instance, Te Angiangi gifted coastal land from the Pōrangahau River southwards to Te Whatuiāpiti in return for a feast that the latter had held for him. The land in this area is associated with Te Whatuiāpiti's descendant hapū Ngāti Kere and Ngāti Hinetewai. Ngāti Manuhiri retain their land on the northern side of the river.

Archaeology

30. Pōrangahau Estuary is recognised as rich in archaeological sites, and provided the first authenticated records of moa hunter occupation in the North Island. Vast shell middens are situated in the dune systems, and pā occur at either end of the estuary.

31. Figure 3 identifies archaeological sites in close proximity to the Pōrangahau River.

Figure 3: Archaeological Sites in close proximity to Pōrangahau River

Statutory Acknowledgement Area of Interest

32. Figure 4 details the Heretaunga Tamatea Area of Interest.

Figure 4: Heretaunga Tamatea Area of Interest

Resource Management Plans

33. The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to the Pōrangahau River. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Iwi and Hapū Resource Management Plans
Kahungunu ki Uta, Kahungunu ki Tai: Marine & Freshwater Fisheries Strategic Plan
Ngāti Hori Freshwater Resources Management Plan 2009-12, Operation Patiki Kohupātiki Marae
Mana Ake - An Expression of Kaitiakitanga, Te Taiwhenua o Heretaunga

Regional Resource Management Plan
Rivers Considered for Riparian Protection (Schedule 8)

Regional Coastal Environment Plan
Specific water quality standards apply to Pōrangahau River Catchment • 200 Faecal Coliforms (cfu/100ml) • 50 Suspended Solids (mg/l)
Estuary is within Significant Conservation Area 1 (SCA1)
Estuary is within the Coastal Environment Inland Boundary
Estuary is within the Vegetation Clearance Management Area

Central Hawke's Bay District Plan
Schedule of Archaeological Sites, Reference Numbers 195 – 206 (Appendix F)
Requirement for Esplanade Reserves or Esplanade Strips

Ruakituri River

Key Values
Cultural
Recreation (angling, rafting, kayaking)
Ecology (fisheries, wildlife)
Landscape (scenic)
Natural character

Table 1: List of documents reviewed

Year	Name	Author
1979	64 New Zealand Rivers	Egarr, Egarr & Mackay
1981	New Zealand Recreational River Survey	G & J Egarr
1982	Submission on the draft Inventory of Wild and Scenic Rivers of National Importance	Ministry of Agriculture and Fisheries
1986	A List of Rivers and Lakes Deserving Inclusion in A Schedule of Protected Waters	Grindell & Guest
1994	Headwater Trout Fisheries in New Zealand	NIWA
1998	Conservation Management Strategy, East Cast Conservancy 1998 – 2008	Department of Conservation
2002	The Ruakituri River - A hidden gem	Whitewater New Zealand
2004	Potential Water Bodies of National Importance	Ministry for the Environment
2012	River Values Assessment System (RiVAS)	Lindis Consulting
2012	Te Urewera Act 2014 – Section 126 Ruakituri Wilderness Area	New Zealand Legislation
2013	Huiarau Range	Wilderness Magazine

2013	Te Urewera-Tūhoe Bill - Submission to the Māori Affairs Committee From the Eastern Fish and Game Council	Fish and Game Council
2014	Ruakituri River	Fish and Game New Zealand Eastern Region
2016	Iwi and Hapū of Te Rohe o Te Wairoa Deed of Settlement + Documents Schedule	Iwi and Hapū of Te Rohe o Te Wairoa and the Crown
2017	Timeline Wilderness Protection	Wilderlife
2018	Cultural Values Table	Hawke's Bay Regional Council
2018	Ruakituri River Trout Fishing	NZ Fishing website
2018	Waterfalls in Hawke's Bay and East Coast	Waterfalls New Zealand Website
2018	Land Air Water Aotearoa (LAWA)	Hawke's Bay Regional Council
2018	Famous New Zealand Rivers	Fishing New Zealand

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the values of the Ruakituri River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the values attributed to the Ruakituri River in those documents referred to in Table 1, above.

Overview

3. The Ruakituri River rises on the slopes of the Huiarau Ranges in *Te Urewera* flowing southeast until it merges with the Hangaroa River just above Te Reinga Falls, around 35 km north of Wairoa. Te Reinga Falls marks the beginning of the Wairoa River.
4. The Ruakituri River is around 70 km long and is widely regarded as a premier trout fishery known for its large trophy trout and impressive scenery. Angling on the river is restricted to fly fishing only, with the use of spinners prohibited. A number of international visitors come to the area each year.
5. The Ruakituri River traverses through vastly different landscapes over its length. The headwaters of the river is a rugged wilderness area with a number of steep limestone gorges. The Ruakituri Gorge is particularly valued by canoeists who know it as a short but challenging run. The middle and lower reaches of the river are predominately surrounded by native bush and farmland areas.
6. Above the Waitangi Falls, the Ruakituri River is located in a 23,000 hectare Wilderness Zone where only foot access is permitted. Access is difficult, with no huts or tracks in the wilderness area and helicopter landings are not permitted.

Location

7. The Ruakituri River is a major tributary for the Wairoa River, flowing southeast from *Te Urewera* towards Wairoa. The major tributaries of the Ruakituri River are the Anini Stream and the Waipaoa Stream.
8. The location and extent of the Ruakituri River can be seen in Figures 1 and 2, below.

Figure 1: Location Map – Ruakituri River

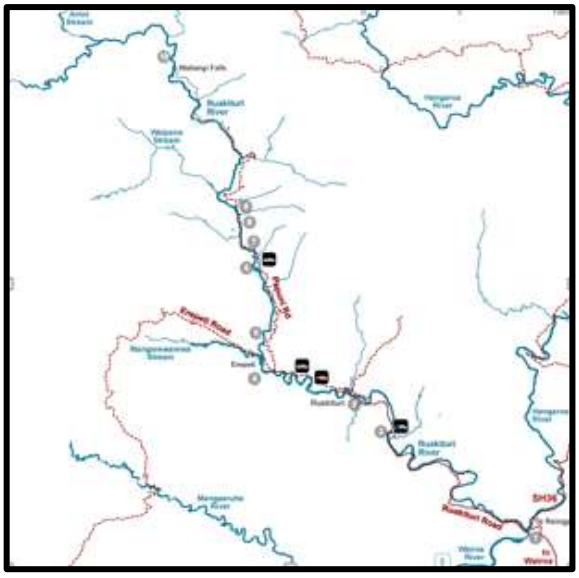


Figure 2: Ruakituri River Map

*Cultural values **

9. The Ruakituri River is culturally significant for the people of Te Rohe o Te Wairoa.
10. Ngāi Kohatu have a korero about the formation of these rivers. According to tradition, Ruamano and Hinekorako were kin taniwha. Atop a hill one day Ruamano and Hinekorako heard the sound of the sea. Deciding to heed its call they began to race to the sea. Ruamano came via the Ruakituri River and Hinekorako via the Hangaroa.
11. Ruakituri River was one of several important locations for Tūhoe, Ngāti Kahungunu, and Ngāti Ruapani. From these locations, they travelled, often considerable distances, to utilise resources seasonally. Traditional settlements on the Ruakituri River included Te Reinga and Erepeti.
12. Te Kooti Arikirangi would also use this route in his escape into Tūhoe country. He built a pā at Puketapu on the Ruakituri River and was there joined by upper Wairoa chiefs Te Waru and Nama, along with some of their followers.
13. Attachment 1 contains a more detailed explanation of the cultural values associated with the Ruakituri River.

Recreation values

14. The Ruakituri River is a high valued trout fishery which supports a variety of fishing experiences along its length. The river contains both brown and rainbow trout and is one of the few rivers in North Island that is reserved for fly fishing only.
15. While angling is by far the most popular recreational activity on this river, it has been paddled by Hawke's Bay kayakers for some years who know it as a short, sharp challenging run.
16. The recreational activities associated with the Ruakituri River have been discussed in a number of nationally published documents over the last 40 years, and are consistently described as outstanding, nationally important and exceptional.
17. The recreational activities which take place on the Ruakituri River are discussed in more detail below.

Angling

18. The Ruakituri River is an internationally renowned trout fishery often described as containing some of the strongest, wildest trout in the world. It contains a large population of both brown and rainbow trout which can reach trophy size.
19. The river has a high number of international visitors each year. In 2013, the National Angling Survey results show that over 16% of the annual effort on the Ruakituri River came from international visitors.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

20. The river contains a variety of fishing opportunities from wilderness fishing in the headwaters to easily accessible river fishing in the middle and lower reaches. The upper, middle and lower reaches of the Ruakituri River are described in more detail in Table 2, below.

Table 2: Description of Ruakituri River reaches

River section	Description
Upper reaches Te Urewera National - Waitangi Falls	The headwaters of the Ruakituri are isolated, with the river flowing for many kilometres through thick bush and, rugged and remote backcountry. This part of the river is difficult to access and requires considerable walking. The waters in this section can be crystal clear. Only rainbow trout are present in this section of river. The upper river and headwaters are classed as a 'wilderness fishing' area, known for its impressive scenery and trout size. On average trout caught in this area weigh between 2- 3 kg, however many weighing 5 kg plus are caught each year.
Middle reaches Waitangi Falls - the Ruakituri Bridge	This section of river is characterised by bush and farmland, is as known as open and easy to fish. The water is a series of pools, rapids and long flat areas. The area is generally very accessible, making it the most popular section for angling on the river. There are high numbers of both brown and rainbow trout present in the middle reaches, which average around 2 kg in size.
Lower reaches Ruakituri Bridge - Erepeti road junction	This section of river is wide and slow. The surrounding landscape is mostly farmland. Both brown and rainbow trout present in this section of river, which on average are between 1 – 2 kg in size.

21. In 1982, the Ruakituri River was identified by the Ministry of Agriculture and Fisheries as being a river of national importance for wilderness and scenic salmonid angling. Only one other river in New Zealand was identified as being nationally important for these attributes.

22. In 1986, the Ruakituri River was placed in 'Group one'[1] in the Government's list of rivers and lakes deserving protection, for its exceptional scenery, fishing, recreational, wildlife and wilderness qualities. The report specifically notes "*it is an outstanding trout fishery for trophy sized rainbow trout in the upper reaches and for both brown and rainbow in the middle and lower reaches*".

23. In 2013, results from the National Angling Survey show the Ruakituri River was the river most enjoyed by anglers in the north island, and the third most enjoyed river by anglers across New Zealand[2]. The enjoyment score is considered to be a reasonable proxy for the importance of a fishery on a national scale in the survey.

24. In 2012, the Ruakituri River was identified as nationally significant salmonid angling in the Hawke's Bay RiVAS assessments.

Boating

25. The Ruakituri River is locally renowned amongst Hawke's Bay paddlers for its impressive scenery and its short, sharp Grade 2 and 3 rapids. The gorge is particularly notable, with the 1981 Recreational River Survey stating the Ruakituri River has *"a short but strikingly beautiful gorge that offers some of the best rafting and canoeing in water south of Gisborne"*.

26. Above the gorge, the rapids are numerous and easy and below the gorge the rapids ease and the river becomes quite flat. The river is usable at a range of flows however, during summer low flows boats need to be carried around a number of the rapids. At high flows most rapids are runnable but there are some big holes.

27. The lower Ruakituri River does not appear to be highly used for jet boating. While navigable by jet boats, the lower parts of the river have no rapids and numerous snags which need to be avoided. The Ruakituri River does not feature on the 2014 Jet Boating New Zealand rivers information document.

[1] Group One = Excellent rivers or lakes containing an outstanding cultural, fisheries, wild flora, location, recreation, scenic, scientific, tourism, wildlife habitat, value(s). Group One contains the very best examples of these values.
[2] Fished by at least 10 survey respondents, out of a total of 431.

28. The 1981, the Recreational River Survey assigned the Ruakituri River an 'exceptional'[3] scenic rating and a 'high'[4] recreational rating within the gorge, and a 'moderate' scenic rating and a 'intermediate' recreational rating below the gorge.

29. In 1986, the Ruakituri River was placed in 'Group one'[5] on the Government's list of rivers and lakes deserving protection, for its exceptional scenery, fishing, recreational, wildlife and wilderness qualities. The report specifically notes the river is popular for canoeing and rafting.

30. In 2002, the Ruakituri River was added to the fifth edition of New Zealand Whitewater, where Graham Charles presents information on over 180 kayaking runs in New Zealand.

31. In 2012, Hawke's Bay RiVAS assessments for whitewater kayaking concluded the upper Ruakituri River was nationally significant for kayaking, with the middle and lower reaches deemed regionally significant for kayaking.

Ecology values

32. The Ruakituri River flows through large areas of native forest and isolated backcountry in its upper reaches, with hill country pasture and commercial forestry surrounding its middle and lower reaches. The surrounding landscape generally translates into higher ecological values in the upper reaches and lower ecological values in the lower reaches.

33. In 2004, the Ruakituri River was identified as a Potential Water Body of National Importance for aquatic biodiversity values by the Ministry for the Environment.

Fish

34. The Ruakituri River provides a highly valued habitat for introduced salmonid fish species (trout). In particular, the habitat is largely natural with high water quality. The river supports good populations of both rainbow and brown trout, which are self-sustaining.

35. The Ruakituri River did not specifically feature in the RiVAS assessment undertaken in Hawke's Bay for native fish.

Wildlife

36. The globally endangered blue duck (whio) are known to inhabit parts of the Ruakituri River, however the exact population estimate is uncertain. Whio are extremely rare, more so than the kiwi with around 23 kiwi for every Whio.

37. In 1985, the Ruakituri River was given a Site of Special Wildlife Interest (SSWI) rating of 'moderate' by the Fauna Survey Unit of the former New Zealand Wildlife Service.

38. In 1986 the Ruakituri River was placed in 'Group One' on the Government's list of rivers and lakes deserving protection, with its wildlife qualities specifically identified as one of the factors contributing to its outstanding classification.

39. In 2012, the Ruakituri River was identified as regionally significant by Hawke's Bay RiVAS assessments for native birdlife. Grey duck were been identified as being present at the river during this assessment however, it is unclear whether the grey ducks present are pure bred grey ducks and further investigations are necessary.

Flora

40. The Ruakituri River is classified as a scenic reserve in the 1998 East Coast Conservancy Conservation Management Strategy, by the Department of Conservation. Specifically, the area is identified as having 'very high' botanical conservation value with podocarp-tawa forest on its terraces, steep bluffs alongside the Ruakituri River and the presence of kaka beak.

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[3] Recreational values graded on a five point scale: insignificant, low, intermediate, high, exceptional

[4] Scenic values graded on a six point scale: dull, uninspiring, moderate, picturesque, impressive, exceptional.

[5] Group One = Excellent rivers or lakes containing an outstanding cultural, fisheries, wild flora, location, recreation, scenic, scientific, tourism, wildlife habitat, value(s). Group One contains the very best examples of these values.

Landscape /scenic values

41. The exceptional scenic values of the upper Ruakituri River have been described in a number of nationally published documents over the last 40 years. The upper reaches are recognised as being strikingly scenic, with the remaining parts of the river described as having more 'moderate' scenic values.

42. Over its length, the Ruakituri River traverses through vastly different landscapes. The headwaters of the river begin within the native forest areas of *Te Urewera*. This area is a rugged wilderness zone with no huts or tracks.

43. The Ruakituri River is clean and clear as in its upper reaches as it flows through a number of steep gorges, past giant limestone cliffs, and finally over the Waitangi Falls which marks the beginning of the river's middle reaches.

44. The Waitangi Falls are 72m high and known as a spectacular scenic attraction. The walk in to see the falls takes around three hours. The falls are not identified on the NZ waterfalls website and due to their inaccessibility they are not highly visited.

45. The middle section of the Ruakituri River is narrow with the surrounding area characterised by step hills covered with native bush and bluffs. Below the Puhoro Station Bridge the river enters the Ruakituri Gorge Scenic Reserve. In its lower reaches the river becomes wider and flatter and the surrounding landscape becomes more modified, with farmland on either side.

46. Photographs of the Ruakituri River are contained in Attachment 2.

Naturalness/intactness of waterbody

47. The headwaters of the Ruakituri flow through *Te Urewera* which is the largest untouched native forest reserve in the North Island. These waters are isolated, flowing for many kilometres through thick bush and rugged, remote backcountry. The middle and lower reaches of the river are surrounded by a more modified landscape.

48. In 2012, the Ruakituri River was identified as nationally significant in the Hawke's Bay RiVAS assessments for natural character. The RiVAS assessment did not discuss the different sections of the river.

Water Quality

49. Hawke's Bay Regional Council regularly monitors the water quality of the lower Ruakituri River at Doughboy Bridge which is classed as a lowland rural site (see Table 3). The nitrate and ammonia attribute bands provide an indication of the chronic toxicity risk to aquatic animals.

50. The Hawke's Bay Regional Council does not monitor the water quality of the upper reaches of the Ruakituri River, however water quality is expected to be in a near natural state due to its surrounding environment.

Table 3: Water quality – Ruakituri River (2016)

Monitoring site	Water clarity	Nitrogen	Phosphorus	Microbiological Indicator (*E. coli*)
Ruakituri Sports Ground (Doughboy Bridge)	Turbidity = 5.4 NTU NTU; Black disk = 1 metres. Both within the worst 25% of like sites within New Zealand.	NOF BAND A Total Nitrogen = 0.1875 g/m3; Total Oxidised Nitrogen = 0.0144 g/m3 (Annual median) and 0.236 g/m3 (95th percentile); Ammoniacal Nitrogen = 0.0069 g/m3 (Annual median), 0.0219 g.m3 (95th percentile). All are in the best 25% of like sites in New Zealand	Dissolved Reactive Phosphorus, and Total Phosphorus are within the best 50% of 'like' sites within New Zealand. Dissolved Reactive Phosphorus = 0.006 g/m3, Total Phosphorus =0.0135 g/m3.	NOF Band A E. coli = 60 n/100ml (annual median) In the best 50% of like sites in New Zealand

Note 1: NOF BAND A for E.coli = water suitable for designed use with les 1% risk of infection from contact with water during activities with occasional immersion (such as wading and boating). Band A is suitable for swimming.

Note 2: NOF BAND A for Nitrogen = high conservation values system. Unlikely to be effects even on sensitive species.

Values Summary

Overarching Value	Sub-value	Description	Outstanding Yes/no	Comments
Cultural	TBC	TBC	TBC	TBC
Recreational	TBC	TBC	TBC	TBC
Ecological	TBC	TBC	TBC	TBC
Landscape	TBC	TBC	TBC	TBC
Natural Character	TBC	TBC	TBC	TBC

Attachment 1

Ruakituri River – Cultural Values Report

Key Values
Mahinga kai
Pā, Kāinga, ara
Rohe boundary

Table 1: List of documents reviewed

Year	Name	Author
1999	Rangahaua Whanui District 4: Te Urewera, Waitangi Tribunal Rangahaua Whanui Series	Anita Miles
2001	Lake Waikaremoana and District Scoping Report	Waitangi Tribunal
2009	Wai 894: Te Urewera Waitangi Tribunal Report	Waitangi Tribunal
2010	Wai 894: Te Urewera Pre-publication, Part 2	Waitangi Tribunal
2011	Ngai Tāmanuhiri Deed of Settlement documents	Ngai Tāmanuhiri and the Crown
2013	Tūhoe Deed of Settlement documents	Tūhoe and the Crown
2015	Wai 894: Te Urewera Pre-publication, Part 6	Waitangi Tribunal
2016	Iwi and hapū of Te Rohe o Te Wairoa Deed of settlement + documents schedule	Iwi and Hapū of Te Rohe o Te Wairoa and the Crown.

1. Introduction *

Purpose

The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the Ruakituri River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

This report presents the summarised findings of the cultural values attributed to the Ruakituri River in those documents referred to in Table 1, above.

The report summarises the cultural values associated with the Ruakituri River into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Importance

The Ruakituri River is significant to Te Rohe o Te Wairoa, one of the six large natural groups negotiating the settlement of Ngāti Kahungunu Treaty of Waitangi claims.

Te Reinga marae is situated at the confluence of the Ruakituri and Hangaroa Rivers. The joining of these two rivers below marks the beginning of the Wairoa River.

Ruakituri River was one of several important locations for Tūhoe, Ngāti Kahungunu, and Ngāti Ruapani. From these locations they travelled often considerable distances, to utilise resources seasonally (Wai 894, 2015).

2. Spiritual Values

Ngāi Kohatu have a korero about the formation of these rivers. According to tradition, Ruamano and Hinekorako were kin taniwha. Atop a hill one day Ruamano and Hinekorako heard the sound of the sea. Deciding to heed its call they began to race to the sea. Ruamano came via the Ruakituri River and Hinekorako via the Hangaroa. This story is the source of the old people's belief that has always associated Ruamano with the Ruakituri River and Hinekorako with the Hangaroa River. Ruakituri was said to be a male river and Hangaroa a female (Deed of Settlement).

3. Mahinga kai

Eel weirs were located at Tauwharetoi on the Ruakituri (Deed of Settlement).

4. Pā, Kāinga, ara

Permanent settlements included Te Reinga and Erepeti on the Ruakituri River.

Ngāti Hine-hika had interests in the Ruakituri River and resided at Te Reinga Falls.

5. Conflict

It was to Te Reinga Falls that Wairoa people fled when attacked by Te Heuheu and Te Whatanui in 1828. Some 40 years later, Te Kooti Arikirangi would also use this route in his escape into Tūhoe country.

There were further military engagements between the Government troops and Te Kooti's party at Ruakituri where Te Kooti was successful. He built a pā at Puketapu on the Ruakituri River and was there joined by upper Wairoa chiefs Te Waru and Nama, along with some of their followers (Wai 894 Report).

From there he wrote letters to both King Tawhiao and Tūhoe, seeking permission to enter their respective territories. Tawhiao, however, had declared 1867–68 as the 'Year of the Lamb' and told Te Kooti that he could expect no assistance from the Kingitanga. Te Kooti was not to fight or renew the wars and would be repelled if

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

he encroached upon the Rohe Potae. Tūhoe held a hui at Ahikereru, attended by several of Te Kooti's whakarau, at which it was decided that Te Kooti could stay in the upper Wairoa and hold 'the confiscated or ceded land there' (Wai 894 Report).

6. Archaeology

A series of pā and other archaeological sites are recorded at Te Reinga Falls where the Ruakituri (at left below), Hangaroa and Wairoa rivers meet.

Figure 1: Archaeological Sites in close proximity to the Ruakituri River

7. Statutory Acknowledgement Area of Interest

Figure 2: Te Rohe o Wairoa Area of Interest

8. Resource Management Plans

The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to the Ruakituri River. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Iwi and Hapū Resource Management Plans
Kahungunu ki Uta, Kahungunu ki Tai: Marine & Freshwater Fisheries Strategic Plan

Wairoa District Plan
Significant Lakes and Rivers (Schedule 5)

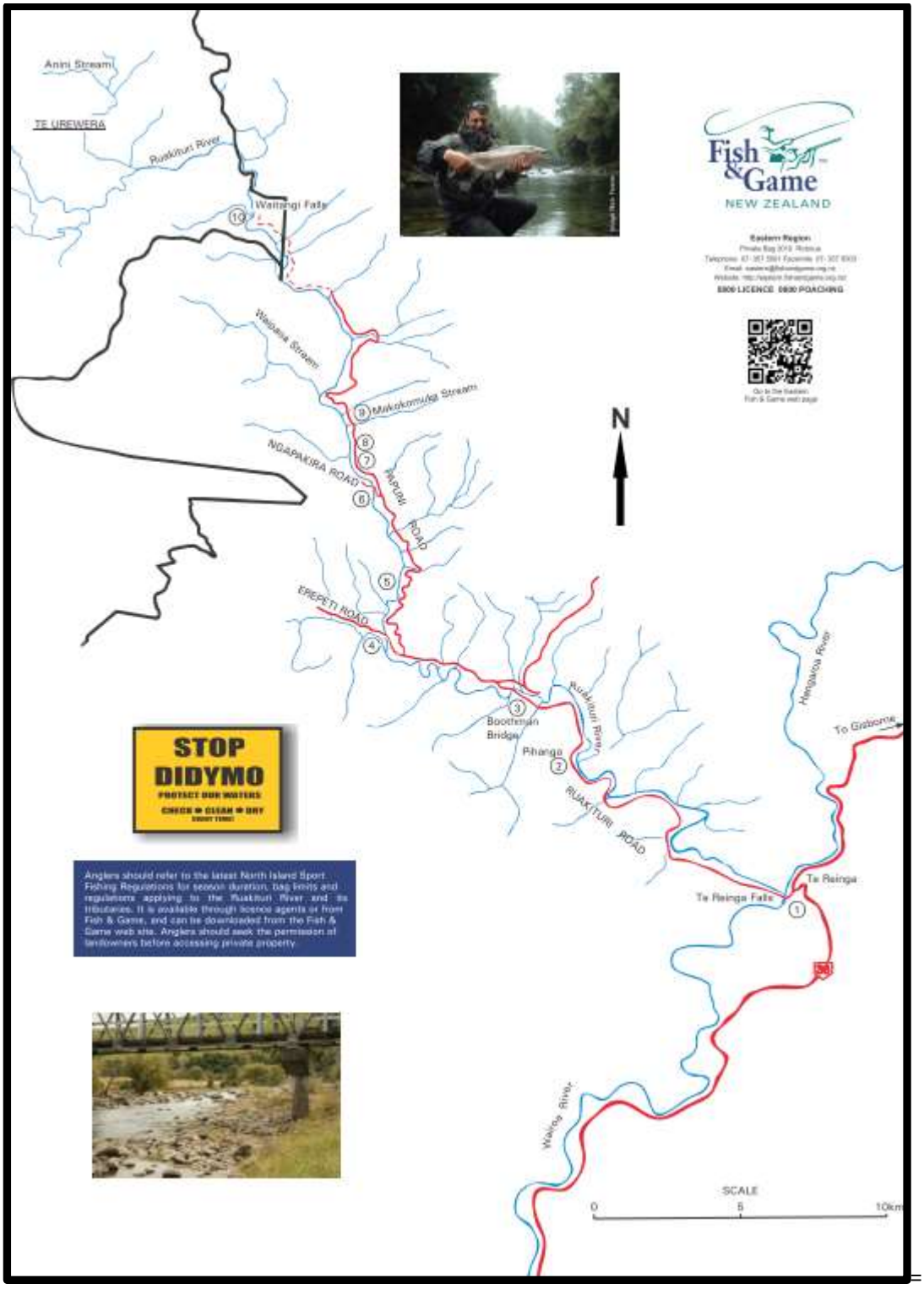
Attachment 2: Photographs – Ruakituri River

Ruakituri River (upper reaches)

Waitangi Falls

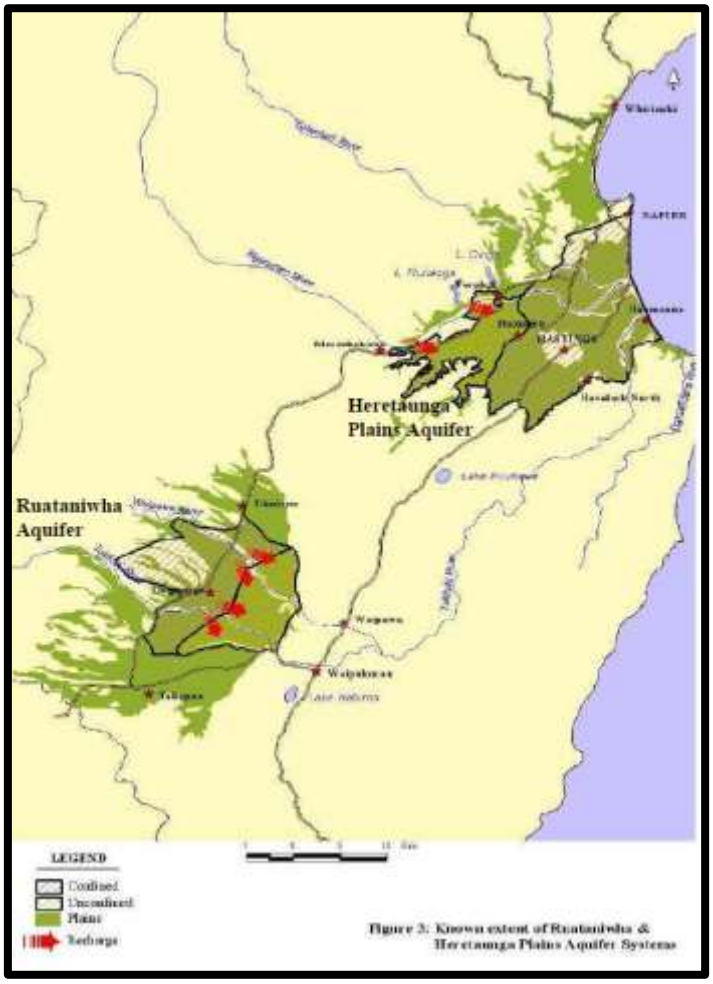
Ruakituri River (middle reaches)

Lower Ruakituri River (at Sports Ground)



Extent of Ruakituri River

Ruataniwha Aquifer



Key Values
Cultural
Ecology
Natural characteristics

Table 1: List of publications reviewed

Year	Name	Author
2004	Lightless, Not Lifeless: New Zealand's Subterranean Biodiversity	NIWA
2009	A Review of Current Groundwater Management in Hawke's Bay and Recommendations for Protection of Groundwater Ecosystems	NIWA
2010	Cultural Impact Assessment of the Tukituki Proposed Water Storage Dams	Te Manga Māori Eastern Institute and Technology
2012	Groundwater Flow Pattern in the Ruataniwha Plains as Derived from the Isotope and Chemistry Signature of the Water	GNS science
2012	The Extent and Depth of Known East Coast Aquifers, North Island , New Zealand	NIWA
2012	Comments from Ngāti Kahungunu Iwi Incorporated on HBRC's Draft Change 5	Ngāti Kahungunu Iwi Incorporated
2012	Submission from Ngāti Kahungunu Iwi Incorporated on HBRC's Proposed Change 5	Ngāti Kahungunu Iwi Incorporated

2012	Submission from Te Taiwhenua o Heretaunga on Proposed Plan Change 5 to the RPS	Te Taiwhenua o Heretaunga
2014	Statement of Evidence by Stephen Swabey ENV-2013-WLG-000050	Hawke's Bay Regional Council
2015	Heretaunga Plains Groundwater Management and Investigations	Hawke's Bay Regional Council
2015	Location and extent of NZ's aquifers	Ministry for the Environment
2016	Groundwater Quality State of Environment: State and Trends	Hawke's Bay Regional Council
2017	Location and extent of New Zealand's Aquifers	Ministry for the Environment, Stats New Zealand
2017	Modelling Effects of Increased Groundwater Allocation on Stream Flows in the Heretaunga Plains	Hawke's Bay Regional Council
2018	Brief of Evidence of Graham David Fenwick (application for a water conservation order at Te Waikoropupu Springs)	NIWA
2018	Wetland Info Page – Aquifers and Caves	Queensland Government
2018	Cultural Values Table	Hawke's Bay Regional Council

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the values of the Ruataniwha aquifer are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

2. This report presents the summarised findings of the values attributed to the Ruataniwha aquifer in those documents referred to in Table 1, above. In accordance with decisions made by the RPC in June 2017, economic and consumptive use values have not been discussed in detail in this report.

3. The report will focus on the cultural values associated with the aquifer system, its groundwater ecosystem and its natural characteristics, not its productive qualities.

Overview

4. The Ruataniwha aquifer is a major aquifer system located in the Ruataniwha basin, in Central Hawke's Bay. The aquifer system is an extremely valuable resource, underlying the Ruataniwha Plains, and is well known due to its productive qualities. Around 28.5 million m^3 of water is extracted from the aquifer system each year, for domestic, horticulture and agriculture use.

5. The Ruataniwha aquifer is a multi-layered alluvial system comprising a relatively shallow unconfined layer, and several deeper confined aquifers. The Ruataniwha aquifer covers an area of approximately 260 km^2, reaching depths of 200 metres at some locations. Travel time of water through the aquifer varies and in some parts it can take 25 years, whereas in others it can take more than 100 years.

6. The Waipawa River, Tukituki River and Makaretu Stream are the three major waterways which flow over the Ruataniwha basin. All rivers and streams which flow over the basin, merge into the Waipawa and Tukituki Rivers at its eastern edge, around 10 km east of Waipawa and Waipukurau towns.

7. The Ruataniwha aquifer is a living ecosystem which is hydraulically connected with a number of surface water bodies which flow over the Ruataniwha basin. These surface water ecosystems, as well as the aquifer ecosystems itself, have intrinsic value, are biologically diverse, and provide important ecosystem functions, such as water purification and flood control.

Location

8. The Ruataniwha aquifer system is located in Central Hawke's Bay, approximately 60 km south of Napier and Hastings. The boundaries of the Ruataniwha Basin are the foothills of the Ruahine Range in the west, Turiri Range and Raukawa Range in the east and rolling hills in the north.

9. Figures 1 and 2 below show the extent of the Ruataniwha aquifer and the main rivers and streams which flow through the Ruataniwha basin.

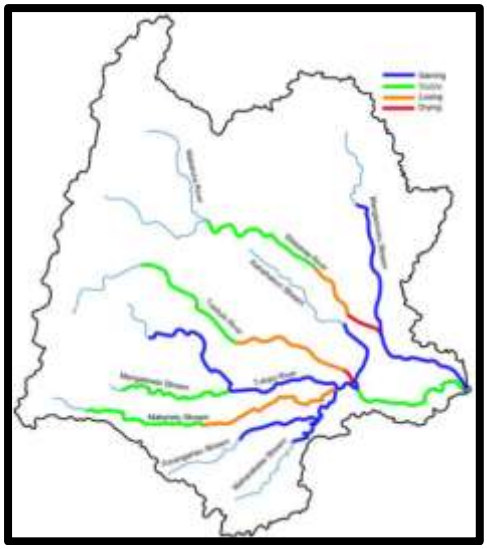


Figure 1: Ruataniwha Basin - Rivers and Streams

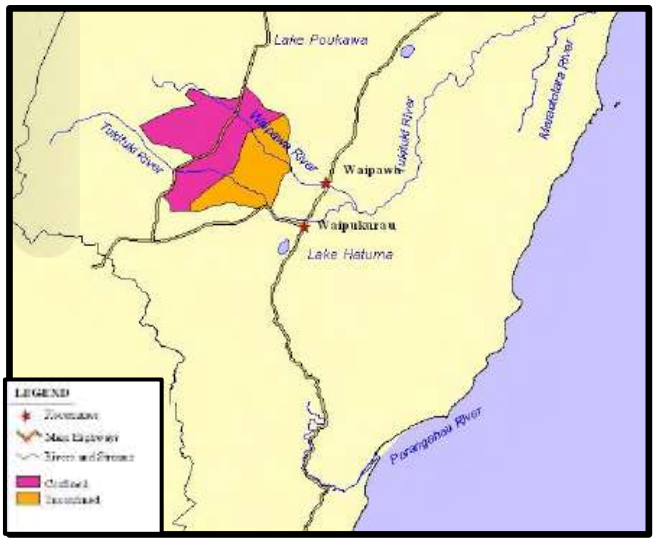


Figure 2: Ruataniwha aquifer system extent

*Cultural values **

10. The Ruataniwha Aquifer is part of the traditional rohe of Heretaunga Tamatea, one of six large natural groups negotiating the settlement of Ngāti Kahungunu Treaty of Waitangi claims.

11. Ngāti Kahungunu has made submissions to the regional council requesting that the Ruataniwha Aquifer be identified and provided for as an outstanding waterbody. This is due to its exceptional water quality and significant contribution to the Hawke's Bay economy.

12. While no direct customary linkages have been established back to the Ruataniwha Aquifer in the documents reviewed in Table 1, it is recognised that all fresh water bodies have special cultural, spiritual, historical and traditional associations with freshwater. The relationship between Tāngata whenua and freshwater is founded in whakapapa, which is the foundation for an inalienable relationship between Māori and freshwater that is recorded, celebrated and perpetuated across generations. Freshwater is recognised by Māori as a taonga of paramount importance, and as such, all waterbodies have important spiritual, physical and customary value.

13. Attachment 1 contains further information on the cultural values associated with the Ruataniwha Aquifer.

Aquifer characteristics

14. The Ruataniwha Basin has an age of approximately 1.5 million years, making it relatively young in geological terms. The basin is composed mainly of alluvial gravel with intermittent clay layers, which vary in thickness from a few metres to around 200 metres in the middle of the basin.

15. The Ruataniwha aquifer system comprises a relatively shallow, unconfined aquifer and several deeper confined aquifers which are recharged in the Ruahine Ranges. None of the aquifer systems are completely isolated, however the basin itself is hydrologically closed to groundwater inputs due to the hard rock geology of its margins.

16. The aquifer is predominately recharged by rainfall in the Ruahine Ranges, with some recharge occurring indirectly from the Waipawa and Tukituki rivers. The groundwater flow is almost parallel to river flow, with the bulk of the groundwater leaving the aquifer along its eastern boundary through rivers and streams.

Recreation values

17. There are no recreational values associated with the Ruataniwha aquifer system itself, however the aquifer system does provide an important supporting function to recreational activities undertaken on rivers and streams hydraulically connected to the aquifer system.

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Ecology values

18. Aquifers are living ecosystems which are dependent on the subterranean presence of water. Aquifer ecosystems provide a diversity of habitats, such as sand, gravel, fractured rock and karst systems that are home to various unseen ecological communities. Attachment 2 contains a diagram of a naturally functioning groundwater ecosystem.

19. These ecosystems include all of the life present in the physical space of the aquifer system, from microorganisms, such as bacteria, fungi and archaea, to primitive invertebrate animals (protozoa, nematoda stygofauna and troglofauna) and advanced invertebrates. These communities interact with each other and their non-living environment and perform natural ecological processes in the absence of light.

20. Groundwater life is rarely seen. This is because access is difficult and bores are usually designed to exclude all but water. This means there is limited understanding of aquifer ecosystems. Despite this, literature suggests that most aquifers support significant biodiversity with complex life persisting to substantial depths.

21. The different components of the Ruataniwha aquifer's ecosystem are discussed in more detail below.

Microorganisms

22. Microscopic organisms are commonly known as microorganisms or microbes and are an important part of an aquifers ecosystem. The microbial communities generally have significant biodiversity and can adapt to living in nutrient-poor and anaerobic conditions found in deep and/or confined aquifer systems. Because of this, some microbial communities found in aquifers grow slowly and have a low tolerance to rapid changes.

Stygofauna and troglofauna

23. Subterranean life is divided into two classes of animals, stygofauna and troglofauna. Stygofauna refers to all aquatic fauna in a groundwater environment, and troglofauna are associated with caves and spaces above the water table, but still part of the aquifer system. There are no known cave or karst systems associated with the Ruataniwha aquifer system so it in unknown if troglofauna are present in this aquifer system.

24. Stygofauna are aquatic animals which live in groundwater. They have adapted to life underground (i.e. no body pigments, no or very small eyes, elongated bodies, elongated antennae), survive on a limited food supply and are extremely energy efficient. Stygofauna feed on plankton, bacteria and plants found in streams and are thought to live longer than other terrestrial species.

25. Stygofauna are important for several reasons. They are intrinsically significant as individual species, particularly where they have a restricted geographical range. These species are known as short-range endemics, which provide insights into evolutionary processes. Stygofauna also cycle nutrients within groundwater systems, and assist with keeping the finer pore spaces in the aquifer open, by ingesting and digesting bacteria, allowing water to flow through these tiny spaces.

26. While few studies have been undertaken looking into aquifer ecosystems in New Zealand, it is believed that New Zealand's stygofauna is widespread and diverse, with high endemism. This is largely because New Zealand's geological past has led to long term separation of habitats and populations, which drives high diversity particularly when many species are confined to very restricted geographical ranges.

27. In isolated aquifers and geological units stygofauna have no opportunity to migrate to another location which results in high diversity. In the Ruataniwha aquifer system, none of the aquifers appear to be totally isolated, which suggests stygofauna species distributions, including any short range endemics, will be relatively widespread through the whole aquifer system.

Karst and spring systems

28. Studies indicate that major karst and spring systems associated with underground aquifers generally provide a very large habitat for complex, interconnected interstices ideal for the bacteria and invertebrates.

29. Notable examples, include the major karst systems under Mounts Owens and Arthur in Tasman, which are the longest and deepest cave systems in the southern hemisphere, and the Te Waikoropupū Springs which are the largest and clearest freshwater springs in New Zealand. Both areas have significant hydro-geological features which provide for extremely high and unique biodiversity values in these areas.

30. While, a number of rivers, streams, springs and wetlands are hydraulically connected to the Ruataniwha aquifer system, there are no known large freshwater 'blue' springs, such as the Te Waikoropupū Springs, or major karst systems in this area.

Water age

31. Groundwater generally moves from a recharge area to a discharge area. The course taken by water moving through the aquifer is called a flow path and varies depending on the thickness and the spatial extent of the aquifer system. The age and flow path of groundwater plays an important ecological role in supporting the aquifer's ecosystem.

32. Groundwater gets older along a flow path, with groundwater quality varying with depth. In most aquifer systems, groundwater flows faster horizontally than vertically. This means groundwater typically flows more rapidly through the upper parts of an aquifer, and groundwater gets older with depth.

33. Monitoring indicates that groundwater in the Ruataniwha aquifer system is mostly over 25 years, getting progressively older with depth. The south east area of the Ruataniwha plains has groundwater older than 100 years, indicating slow movement and slow recharge of groundwater in this area.

Groundwater dependant ecosystems (rivers, streams, wetlands and springs)

34. Groundwater dependent ecosystems are those ecosystems which need inputs of groundwater to maintain their current structure and functions and can include rivers, streams, wetlands and springs.

35. Three main rivers flow over the Ruataniwha basin from west to east. The Waipawa River in the north, Tukituki River in the middle, and the Makaretu Stream in the south. In addition, there are a number of small streams which cross the basin, such as the Makaroro, Tukipo, and Mangaonuku Rivers and the Porangahau and Kahahakuri Streams. All rivers merge into the Waipawa and Tukituki Rivers at the basins eastern edge.

36. There is clear interaction between the groundwater and surface water bodies in the Ruataniwha basin, with flow patterns varying according to a loss gain relationship between aquifers and streams. Of note, are the Waipawa and Tukituki Rivers which lose water for most of their riverbed across the Ruataniwha Plains. Groundwater rises again to the east of the basin, discharging as surface water in the Tukituki River.

37. The water quality and quantity and the ecology of the Ruataniwha aquifer system is important to the ecological health of those surface water bodies with strong hydraulic connections to the aquifer system. i.e. poor aquifer health, or decreased water quantity, may impact on water levels or water quality in highly connected surface water bodies.

Water Quality

38. Groundwater quality in aquifers across New Zealand varies, and depends on a range of factors such as nearby land uses, the soil composition above the water table, the geology of the aquifer and the groundwater residence time.

39. Hawke's Bay Regional Council regularly monitors the quality of groundwater in the Ruataniwha aquifer at eight sites. The primary aim of this monitoring is to ensure the groundwater meets health and aesthetic based standards, as opposed to protecting biodiversity values of the aquifer ecosystems.

40. The water quality of the Ruataniwha aquifer system with regard to 'health and aesthetics' and 'ecosystem health' is discussed further below.

Water quality – health and aesthetics

41. The quality of groundwater in the Ruataniwha aquifer system is measured against the New Zealand Drinking water standards to ensure the water is suitable for human consumption.

42. Overall, most monitoring sites comply with the New Zealand drinking water standards (DWSNZ) for the key chemical water quality parameters[1]. The exceptions are elevated concentrations of manganese and iron, which appear to be naturally occurring, and nitrite-nitrogen which is exceeded at one monitoring site.

[1] HBRC does not monitor for all chemical water quality parameters in the NZDWS.

Additionally, one monitoring site had microbiological non-compliance for *E.coli* in the 5-year monitoring period between 2009 and 2014.

43. Each of the water quality parameters measured as part of HBRC's programme are summarised in more detail in Table 2, below. This data was obtained directly from the 5 yearly State of the Environment Report 2009 – 2014.

Table 2: Water Quality data– Ruataniwha aquifer (2009 – 2014)

Water quality parameter	Compliance /non-compliance with DWSNZ guidelines
pH	Groundwater at all sites falls within the optimum guideline pH range of 7 to 8
Total Dissolved Solids (TDS)	The TDS concentrations at all sites are below the guideline value of 1000 mg/L.
Total Hardness	All sites have total hardness levels below the guideline value of 200 mg/L.
Iron and Manganese	Fifty percent of the sites comply with the guideline value for manganese, and seventy five percent of sites comply with the guideline value for iron. Those sites with elevated concentrations of manganese and iron are thought to be naturally occurring. Elevated iron and manganese levels are a characteristic of aquifer systems where reducing (oxygen-poor) conditions exist naturally. The combined effects of reducing conditions and a long residence time of the groundwater in the aquifer encourage dissolution of iron and manganese present in aquifer materials. Monitoring indicates that most of the deeper groundwater has mean residence times of greater than 25 years, with longer residence times of 100+ years existed at sites in the southern area of the Ruataniwha aquifer system. These age distributions are consistent with elevated manganese and iron concentrations. Those sites which have elevated iron and manganese levels, also have water age residence times ranging from 57 to over 210 years.
Nitrate-Nitrogen	The majority of sites have low to moderate levels of nitrate-N. One site has elevated nitrite-N, which exceeds the long-term exposure standard.
Ammoniacal-N	All sites comply with the aesthetic guideline of 1.5 mg/L in the DWSNZ.
Phosphorus (Soluble Reactive Phosphorus - SRP)	Phosphorus levels at sites are generally less than 0.05 mg/L. However, several monitoring bores have elevated phosphorus, which is likely to be related to the area geology, because the groundwater at this depth has a mean residence time of 149 years.
Sulphate	All sites have sulphate levels below guideline levels of 200 mg/L.
Sodium and Chloride	All sites have sodium and chloride levels below guideline levels for sodium and chloride.
Microbiological Indicator (*E. coli*)	87.5% of monitoring sites complied with the DWSNZ level. One site monitoring bore had 1 cfu/100 mL in the 5-year period of monitoring.

Water quality – ecosystem health

44. The geology of an aquifer has a significant effect on the natural water chemistry within an aquifer system. This means the 'natural water quality' within each aquifer system varies. For example, if dominant rock types present in the aquifer have soluble materials, such as limestone, the groundwater will have higher concentrations of ions, than in aquifers with less soluble materials such as insoluble quartz pebbles. Additionally, the chemical makeup of groundwater with longer residence time will be completely different to that of water with low residence time.

45. Over a period of time the fauna and microbial communities living in an aquifer become highly adapted to its living space and its quality of water. This means the 'optimal' state of water quality required to protect each aquifer system is different, and might not necessarily correlate with the New Zealand Drinking Water Standards. For example, the water quality parameters for ecosystems with aquifers with brackish water will be completely different to that of freshwater aquifers.

46. To date, no monitoring or investigations have taken place looking into the standard of water quality required to protect the biodiversity value of the ecosystems living within the Ruataniwha aquifer system.

Values Summary

Overarching Value	Sub-value	Description	Outstanding Yes/no	Comments
Cultural	TBC	TBC	TBC	TBC
Recreational	TBC	TBC	TBC	TBC
Ecological	TBC	TBC	TBC	TBC
Landscape	TBC	TBC	TBC	TBC
Natural Character	TBC	TBC	TBC	TBC

Attachment 1

Ruataniwha Aquifer - Cultural Values Report

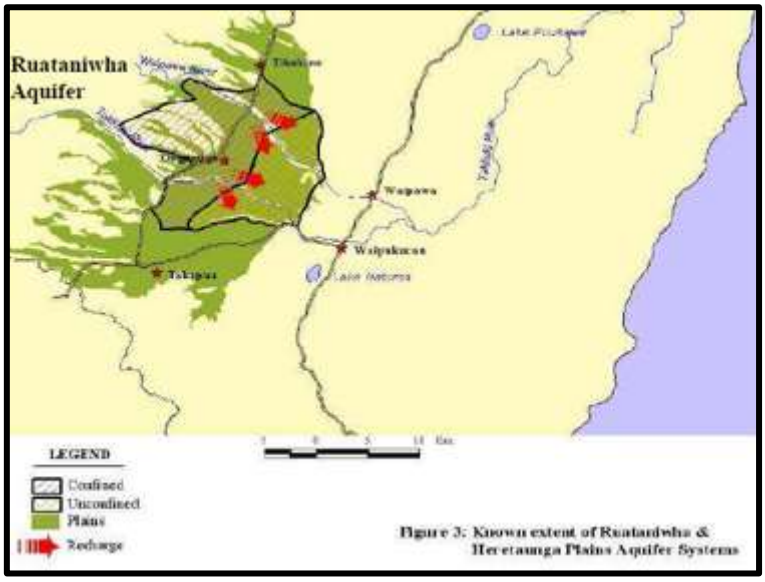

Figure 3: Known extent of Ruataniwha & Heretaunga Plains Aquifer Systems

Table 1: List of documents reviewed

Year	Name	Author
2004	Lightless, not lifeless: New Zealand's subterranean biodiversity	NIWA
2012	Initial comments on HBRC's Draft Change 5, NKII	Ngāti Kahungunu Iwi Incorporated
2012	Submission from NKII on HBRC's Proposed Change 5, NKII	Ngāti Kahungunu Iwi Incorporated
2012	Submission from Te Taiwhenua o Heretaunga on Proposed Plan Change 5 to the RPS	Te Taiwhenua o Heretaunga
2012	Tukituki River Catchment Cultural Values and Uses	Te Taiwhenua O Tamatea & Te Taiwhenua O Heretaunga for HBRC
2015	Heretaunga Plains Groundwater Management and Investigations	Hawke's Bay Regional Council
2016	Groundwater Quality State of Environment: State and Trends	Hawke's Bay Regional Council
2016	Heretaunga Tamatea deed of settlement documents	Heretaunga Tamatea and the Crown
2018	Brief of Evidence of Graham David Fenwick (application for a water conservation order at Te Waikoropupu Springs)	NIWA
2018	Cultural Values Table	Hawke's Bay Regional Council

*1. Overview **

Purpose

The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the Ruataniwha aquifer are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

This report presents the summarised findings of the cultural values attributed to the Ruataniwha aquifer in those documents referred to in Table 1, above.

The report summarises the cultural values associated with the Ruataniwha aquifer into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all

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water bodies are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Importance

The Ruataniwha Aquifer is part of the traditional rohe of Heretaunga Tamatea, one of six large natural groups negotiating the settlement of Ngāti Kahungunu Treaty of Waitangi claims.

Ngāti Kahungunu has made submissions to the regional council requesting that the Ruataniwha Aquifer be identified and provided for as an outstanding waterbody. This is due to its exceptional water quality and significant contribution to the Hawke's Bay economy.

While no direct customary linkages have been established back to the Ruataniwha Aquifer in the documents reviewed in Table 1, it is recognised that all fresh water bodies have special cultural, spiritual, historical and traditional associations with freshwater. The relationship between Tāngata whenua and freshwater is founded in whakapapa, which is the foundation for an inalienable relationship between Māori and freshwater that is recorded, celebrated and perpetuated across generations. Freshwater is recognised by Māori as a taonga of paramount importance, and as such, all waterbodies have important spiritual, physical and customary value.

2. Archaeology

Figure 1: Archaeological sites around the northern Ruataniwha Basin

Figure 2: Archaeological sites around the southern Ruataniwha Basin

3. Statutory Acknowledgement Area of Interest

Figure 3: Heretaunga Tamatea Area of Interest

4. *Resource Management Plans*

The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to the Ruataniwha Aquifer. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Iwi and Hapū Resource Management Plans
Kahungunu ki Uta, Kahungunu ki Tai: Marine & Freshwater Fisheries Strategic Plan
Mana Ake - An Expression of Kaitiakitanga, Te Taiwhenua o Heretaunga

Regional Resource Management Plan
Schedule 4: Known Productive Aquifer Systems in the Hawke's Bay Region
Schedule 6: Ground Water Management Zones
Schedule 6b: Catchments sensitive to animal effluent discharges

Attachment 2: Typical Groundwater Ecosystem

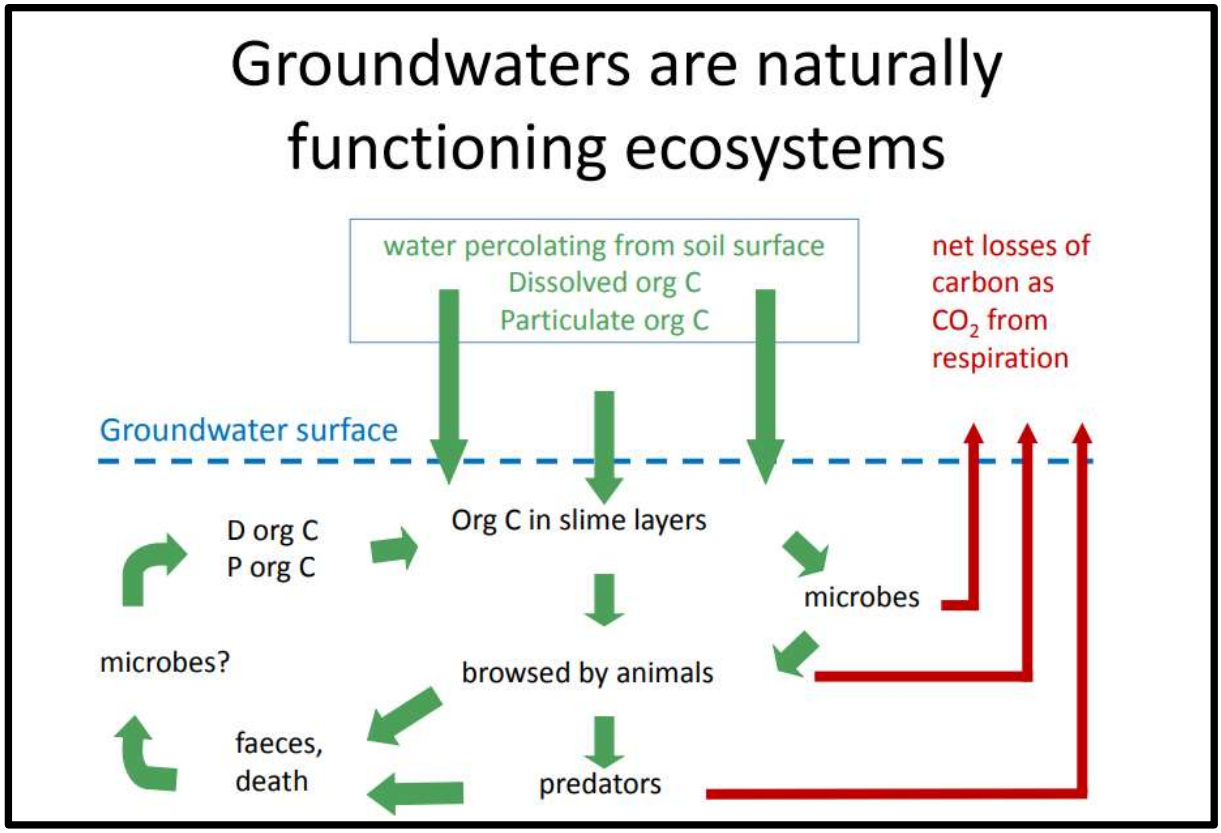

Figure 1: Typical groundwater ecosystem

Taruarau River

Key Values
Cultural
Recreation (trout fishing)
Ecology (aquatic biodiversity values)
Natural character

Table 1: List of documents reviewed

Year	Name	Author
1981	New Zealand Recreational River Survey	G & J Egarr
1984	The Relative Value of Hawke's Bay Rivers to New Zealand Anglers	Fisheries Research Division - N.Z. Ministry of Agriculture and Fisheries
1986	A List of Rivers and Lakes Deserving Inclusion in A Schedule of Protected Waters	Grindell & Guest
1994	Headwater Trout Fisheries in New Zealand	NIWA
2004	Potential Water Bodies of National Importance	Ministry for the Environment
2010	Taruarau / Napier-Taihape Rd to Whanawhana, IV	Whitewater NZ forum
2012	River Values Assessment System (RiVAS)	Lindis Consulting
2015	An Application to the Minister for the Environment for a Water Conservation Order on the Ngaruroro River and Clive River	Catalyst Group
2015	Copy Supporting an Application for Water Conservation Order on the Ngaruroro River from Whitewater New Zealand	Whitewater New Zealand
2016	Inventory of Values in the TANK Catchments of Hawke's Bay	Cawthron Institute
2016	New Zealand Geo-preservation Inventory	Geological Society of New Zealand
2017	The 2017-2018 Trout Fishing Season	Fish and Game New Zealand
2018	Cultural Values Table	Hawke's Bay Regional Council

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the values of the Taruarau River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the values attributed to the Taruarau River in those documents referred to in Table 1, above.

Overview

3. The Taruarau River rises in the Kaimanawa Ranges flowing south across rolling tussock country for around 70 km before it joins the Ngaruroro River. The river is highly valued for kayaking and salmonid angling.
4. The Taruarau River is very scenic and begins by meandering through extensive tussock grasslands, before traveling through scrub lined valleys with striking rocky overhangs. The river drops into an enclosed gorge before flowing into the Ngaruroro River around 20 km upstream of Whanawhana.
5. The area has a high degree of natural character, with the exception of some extensive pastoral farming which occurs on around 10% of the catchment area.

Location

6. The Taruarau River is located approximately 100 km northwest of Napier on the east coast of the North Island. The Taruarau River is part of the Ngaruroro catchment and is a major tributary of the Ngaruroro River.
7. The location and extent of the Taruarau River is shown in Figures 1 and 2, below.

Figure 1: Location of Taruarau River

Figure 2: Extent of Taruarau River (Number 2)

*Cultural values **

8. The Taruarau River is located within the traditional boundary of two Treaty Settlement Entities - Heretaunga Tamatea and Ngāti Tūwharetoa.
9. The river is associated with the early origins of Kahungungu and iwi associations with the Ruahine Range. From the deed of settlement documents:

   At the place where the Ikawetea River flows into the Tāruarau River there is a large rock where it is said that Kahungunu sat and watched for upokororo. This place thereafter was named Te Upokororo-o-Kahungunu. Some accounts record that it was at Te Upokororo o Kahungunu that Tamatea's mōkai named Pohokura escaped. Other accounts suggest Tamatea released Pohokura at this place. Pohokura has continued to inhabit the range and is a kaitiaki for Tamatea's descendants - particularly for those hapū that inhabited the lower forest and foothills.

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10. Attachment 1 contains a more detailed description of the cultural values associated with the Taruarau River.

Recreation values

11. The main recreational activities which take place on the Taruarau River are angling and kayaking. The river can be rafted however reviewed literature does not discuss how often rafting takes place. The river is wild and scenic which adds to the recreational value of the river.

12. The recreational activities which take place on the Taruarau River are discussed in more detail below.

Angling

13. The Taruarau River is a high quality wilderness trout fishery which is highly used by anglers living in Hawke's Bay. It is a mixed fishery which is dominated by rainbow trout. The average weight of trout is around 1.5 kg, with some larger trophy trout present in the river.

14. In 1984, a report by the Fisheries Research Division identified the Taruarau River as a wilderness fishery of local importance. The report describes the Taruarau River as one of the most remote and inaccessible rivers in the district, with large fish, and a low catch rate, which is thought to be of exceptional value by the anglers who fish there.

15. In 1994, the Taruarau River was identified by NIWA as a Category A headwater trout fishery which contains trophy trout and fishes well all season. There are a total of eighteen Category A headwater fisheries in the North Island, eighty one in New Zealand.

16. In 2012, the Taruarau River, was identified as regionally significant in the Hawke's Bay RiVAS assessments for salmonid angling.

17. In 2013, results from the National Angling Survey show the Taruarau River as being within the top 3% of New Zealand rivers most enjoyed by anglers. The enjoyment score is considered to be a reasonable proxy for the importance of a fishery on a national scale in the survey.

Boating

18. The Taruarau River is a technical whitewater run which can be used by experienced kayakers and rafters. The river contains a steep and difficult gorge which is only able to be kayaked during high flows.

19. The whitewater is challenging, with the Taruarau River starting off small and then gaining momentum and volume as it proceeds through several narrow winding canyons with drops, twists, chutes and waterfalls. The river contains predominately Class 4 rapids.

20. The River is accessed from the Napier-Taihape Road, offering a long one day trip or a two day trip with a stopover in Shutes Hut.

21. In 1981, the New Zealand Recreational River Survey assigned the recreational and scenic values of the Taruarau River a 'low'[1] and 'impressive'[2] rating, respectively. At the time the Taruarau River was seldom used for boating due to the number of high grade technical rapids.

Ecology values

22. The Taruarau River flows through a variety of natural landscapes, from areas of rolling tussock country which are very barren and dry to rugged and isolated areas surrounded by scrubland. Given the lack of development pressures in the surrounding area the river is expected to be in a near natural state with high ecological values.

23. In 2004, the Taruarau River was identified as a Potential Water Body of National Importance for aquatic biodiversity values by the Ministry for the Environment.

[1] Recreational values graded on a five point scale: insignificant, low, intermediate, high, exceptional

[2] Scenic values graded on a six point scale: dull, uninspiring, moderate, picturesque, impressive, exceptional.

Fisheries

24. The Taruarau River provides a highly valued habitat for introduced fish species supporting good populations of both rainbow and brown trout which are self-sustaining. The river is a key source of the rainbow trout population in the Ngaruroro River.

25. The Taruarau River did not specifically feature in the RiVAS assessment undertaken in Hawke's Bay for native fish.

Wildlife

26. No information could be found about the wildlife present in the Taruarau River, and the river did not feature in the RiVAS assessment undertaken in Hawke's Bay for native birdlife.

Macroinvertebrates

27. In 2013 and 2014, Hawke's Bay Regional Council monitored the freshwater ecology of the Taruarau River to provide further information for the TANK plan change (see Table 3). The macroinvertebrate measures in Table 2 are an indicator of stream health where generally, the higher the Macroinvertebrate Community Index, taxa richness and percent EPT, the better the health of the stream.

28. The monitoring results show that the ecological health of the Taruarau River at this location is excellent, with no pollution occurring.

Table 2: Macroinvertebrate sampling results – Taruarau River (2013, 2014)

Monitoring site	Macroinvertebrate Community Index (MCI)	Classification	Taxonomic richness	Percent EPT[3] richness
Taruarau River	MCI > 121/125	Excellent	25/29	55.2%

Note: Regional Councils use a classification from Stark & Maxted (2007) for MCI sampling, assigning a rating of either excellent, good, fair or poor for ecological health and/or habitat condition.

Landscape / scenic values

29. The Taruarau River flows through a variety of natural landscapes, from areas of rolling tussock country which are very barren and dry to rugged and isolated areas surrounded by scrubland and pine forests. The river flows through some impressive gorges which rocky overhangs.

30. In 1981, the New Zealand Recreational River Survey assigned the scenic value of the Taruarau River an ''impressive'[4] rating.

31. Photographs of the Taruarau River are contained in Attachment 2.

Geological features

32. The Taruarau River is a steep sided convoluted river which meanders at a depth of around 400 m through greywacke mountains.

33. The National Geo-preservation Inventory, which identifies and ranks geological features according to their relative significance, identifies the Taruarau River as containing one of the two best gorges in Hawke's Bay, listing this feature as regionally significant.

[3] EPT stands for Ephemeroptera (mayfly), Plecoptera (stonefly) and Trichoptera (caddisfly), and are macroinvertebrates which are sensitive to water pollution.

[4] Scenic values graded on a six point scale: dull, uninspiring, moderate, picturesque, impressive, exceptional.

Naturalness/intactness of waterbody

34. The area has a high degree of natural character, with the exception of some extensive pastoral farming which occurs on around 10% of the catchment area.

35. In 2012, the Taruarau River was identified as nationally significant in the Hawke's Bay RiVAS assessments for natural character. Specifically, the reports states the Taruarau River had a high degree of natural character, owing to its very low level of modification.

Water Quality

36. Hawke's Bay Regional Council regularly monitored the Taruarau River during 2013 and 2014 to provide further information for the TANK plan change (see Table 3). Due to limited access, the monitoring site was not able to be placed at the bottom of the catchment, as such the following results only capture part of the influences in the catchment.

37. Monitoring results show the Taruarau River has excellent water quality at this location.

Table 3: Water quality – Taruarau River (2013, 2014)

Monitoring site	Water clarity	Nitrogen	Phosphorus	Microbiological Indicator (*E. coli*)
Kuripapango	Turbidity = 1.5 NTU; Black disk = 3.9 metres.	Total Nitrogen = 0.051 g/m3; Total Oxidised Nitrogen = 0.017 g/m3 (Annual median) and 0.0275 g/m3 (95th percentile); Ammoniacal Nitrogen = 0.005 g/m3 (Annual median)	Dissolved Reactive Phosphorus = 0.002 g/m3, Total Phosphorus =0.002 g/m3.	NOF Band A E. coli = 13 cfu/100ml

Values Summary

Overarching Value	Sub-value	Description	Outstanding Yes/no	Comments
Cultural	TBC	TBC	TBC	TBC
Recreational	TBC	TBC	TBC	TBC
Ecological	TBC	TBC	TBC	TBC
Landscape	TBC	TBC	TBC	TBC
Natural Character	TBC	TBC	TBC	TBC

Attachment 1

Taruarau River – Cultural Values Report

Key Values
Spiritual values
Wāhi Tapu, wāhi taonga, wai tapu

Table 1: List of documents reviewed

Year	Name	Author
2004	Wai 201: The Mohaka ki Ahuriri report	The Waitangi Tribunal
2012	Submission from Te Taiwhenua o Heretaunga on Proposed Plan Change 5 to the RPS	Te Taiwhenua o Heretaunga
2015	WCO application on the Ngaruroro River and Clive River	Catalyst Group
2015	Environment Court Decision: NKII vs HBRC	Environment Court
2015	Mana Ake - Nga Hapu o Heretaunga – An Expression of Kaitiakitanga	Te Taiwhenua o Heretaunga
2016	Heretaunga Tamatea Deed of Settlement documents	Heretaunga Tamatea and the Crown
2016	Ahuriri Hapū Deed of Settlement documents	Ahuriri Hapū and the Crown
2016	Inventory of Values in the TANK Catchments of Hawke's Bay	Cawthron Institute
2016	Ngaruroro Values and Attributes Report	
2018	Cultural Values Table	Hawke's Bay Regional Council

*1. Introduction **

Purpose

The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the Taruarau River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

This report presents the summarised findings of the cultural values attributed to the Taruarau River in those documents referred to in Table 1, above.

The report summarises the cultural values associated with the Taruarau River into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of

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the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Importance

The Taruarau River is located within the traditional boundary of two Treaty Settlement Entities, being Heretaunga Tamatea and Ngāti Tūwharetoa.

The river is associated with the early origins of Kahungungu and associations with the Ruahine Range. From the deed of settlement documents:

The connection of Heretaunga Tamatea hapū to the Ruahine Range dates back to a journey made by Tamatea-pōkai-whenua, the father of Kahungunu, from Tūranga into Mōkai Pātea. Several accounts record that Kahungunu accompanied his father for part of the journey. Tamatea-pōkaiwhenua travelled down the east coast to Ahuriri before striking inland and travelling up the Ngaruroro River before entering the Ruahine Range. Tamatea named several places along the route of his journey. At one point he saw a tawai tree on the summit of a peak which was thereafter named Rākautaonga. Continuing on, the party travelled up the Tāruarau River. The Ikawetea River was also named by Tamatea. This was the place where seagulls appeared after Tamatea and Kahungunu undid the string which tied the basket of fish they were eating. At the place where the Ikawetea River flows into the Tāruarau River there is a large rock where it is said that Kahungunu sat and watched for upokororo. This place thereafter was named Te Upokororo-o-Kahungunu. Some accounts record that it was at Te Upokororo o Kahungunu that Tamatea's mōkai named Pohokura escaped. Other accounts suggest Tamatea released Pohokura at this place. Pohokura has continued to inhabit the range and is a kaitiaki for Tamatea's descendants - particularly for those hapū that inhabited the lower forest and foothills.

The Deed of Settlement also identifies that a stone known as Te Tokatamahoutu marked the junction of the Tāruarau and Ikawetea Streams.

Tank Group

The TANK Group has been working since 2012 on land and water management issues for the Tutaekurī, Ahuriri, Ngaruroro (Includes the Taruarau) and Karamū catchments. Its purpose is to recommend limits and measures for a workable plan change. TANK's collaborative membership includes more than 30 groups, representing Tāngata Whenua, primary sector, councils and environmentalists.

The TANK group has been progressing a cultural values framework, identifying values and attributes to characterise water quality.

2. Archaeology

There are no registered archaeological sites in close proximity to the Taruarau River.

3. Statutory Acknowledgement Area of Interest

Figure 1: Heretaunga Tamatea Area of Interest

4. Resource Management Plans

The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to the Taruarau River. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Iwi and Hapu Resource Management Plans
Kahungunu ki Uta, Kahungunu ki Tai: Marine & Freshwater Fisheries Strategic Plan
Mana Ake - An Expression of Kaitiakitanga, Te Taiwhenua o Heretaunga

Attachment 2: Photographs - Taruarau River

Te Whanganui a Orotū (Ahuriri Estuary)

Key Values
Cultural
Recreation
Ecology (wildlife, fisheries)
Landscape (scenic, geological features)

Table 1: List of publications reviewed

Year	Name	Author
1987	Wetlands of National Importance to Fisheries	Ministry of Agriculture and Fisheries
1992	Te Whanganui-ā-Orotu, Traditional Use and Environmental Change, customary usage report, Wai 55	P. Parsons
1994	Conservation Management Strategy (volume II) for Hawke's Bay Conservancy 1994 – 2004.	Department of Conservation
1995	Te Whanganui-ā-Orotu report, Wai 55	Waitangi Tribunal Report
1996	Waiohiki Land Claim, Wai 168	R.C Pewhairangi
1996	A Directory of Wetlands in New Zealand	Department of Conservation
2004	Potential Water Bodies of National Importance	Ministry for the Environment
2004	Potential Water Bodies of National Importance for Recreation Value	Ministry for the Environment
2004	The Mohaka ki Ahuriri Report, Wai 201	Waitangi Tribunal Report
2004	Ahuriri Estuary Environmental Evaluation	Bioresearches
2006	Areas of Significant Conservation Values: HB Coastal Marine Area (HBRC Report Number 4203 - Draft)	Hawke's Bay Regional Council
2012	Submission from Te Taiwhenua o Heretaunga on Proposed Plan Change 5 to the RPS	Te Taiwhenua o Heretaunga
2012	Magical Places – 40 Wetlands to Visit in New Zealand	Department of Conservation
2013	Maungaharuru-Tangitū Hapū Deed of Settlement + Documents Schedule	Maungaharuru-Tangitū Hapū and the Crown
2014	Ahuriri Estuary: Contact Recreation and Food Gathering Review	Hawke's Bay Regional Council
2015	Tūtaekurī Awa Management and Enhancement Plan	Ngā Hapū o Tūtaekurī
2016	New Zealand Geo-preservation Inventory	Geological Society of New Zealand

2016	Mana Ahuriri Deed of Settlement + Documents Schedule	Ahuriri Hapū and the Crown
2016	The IUCN Red List of Threatened Species	Global Species Programme, various scientists and partners worldwide
2017	Sewage may not have poured into Napier estuary if city outfall pipe was bigger	Stuff.co.nz
2017	Ahuriri Information Sheet (TANK)	Hawke's Bay Regional Council
2017	Napier City Council releases sewage into Ahuriri Estuary due to heavy rain	Stuff.co.nz
2017	Thousands of litres of tallow bulk storage spills into estuary	Stuff.co.nz
2018	Ahuriri Estuary Walking Track Information Sheet	Department of Conservation
2018	Cultural Values Table	Hawke's Bay Regional Council

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the values of the Ahuriri Estuary are outstanding for the purposes of the Hawke's Bay Regional Council's outstanding water body plan change.

2. This report presents the summarised findings of the values attributed to the Ahuriri Estuary in those documents referred to in Table 1, above. For clarification, Te Whanganui a Orotū and Ahuriri Estuary are used interchangeably in this report.

Overview

3. Te Whanganui a Orotū is 470 hectares in size and is frequently referred to as a 'national treasure', predominately because of its wildlife and fishery values.

4. The Ahuriri Estuary supports 29 species of fish and contains a 160 hectare wildlife sanctuary which provides an important feeding and resting area for over 70 species of water birds, some of which are critically endangered. It is a significant wetland along the east coast of New Zealand and its wildlife and fisheries habitat is recognised as being nationally significant. The estuary's unique geological history makes it a nationally important example of tectonic processes.

5. Historically, the Tutaekurī and Esk Rivers flowed into Te Whanganui a Orotū which was predominately freshwater and significantly larger at 3,840 hectares in size. In 1931, the Napier earthquake lifted the land by up to two metres and exposed around 1300 hectares of original lagoon. This combined with a significant amount of drainage and reclamation reduced the lagoon to its current size. Much of the estuary's margin is contained by man-made stop-banks and the Tutaekurī and Esk Rivers were diverted away from the estuary some time ago.

6. The Ahuriri Estuary is a significant recreational resource, providing for a number of recreational activities including swimming, boating and bird watching. A number of cycle pathways surround the estuary. In the past, the estuary has provided significant food gathering opportunities however current information suggests the shellfish is unsafe for human consumption.

7. The estuary is surrounded by urban, farmland and industrial uses, with the majority of Napier City's stormwater being discharged untreated into the estuary. On very rare occasions (i.e. a typical intense rain events), untreated wastewater is discharged into the estuary's inlet. Monitoring suggests that the water quality and ecology of the estuary environment are affected by the poor quality of water in the urban drains that flow into the estuary. There is a build-up of chemicals stored in the estuary's muds from decades of industrial contamination.

8. The Ahuriri Estuary is listed as a Significant Conversation Area in the Regional Coastal Environment Plan and has been identified as one of the six environmental hotspots by Hawke's Bay Regional Council, with funding allocated towards improving the area. In 2017, the Napier City Council released the Ahuriri Estuary and Coastal Edge Masterplan which seeks a healthy and vibrant Ahuriri Estuary. In 1996, the estuary was recognised as meeting the Ramsar Sites Criteria which identifies Wetlands of International Importance.

Location

9. Te Whanganui a Orotū is situated directly alongside the city of Napier. It is located within the Ahuriri catchment which is approximately 13,128 hectares in size.

10. The Ahuriri Estuary is divided into several management areas. The area from Pandora Bridge to the Embankment Bridge is referred to as the 'Lower Estuary', the area from the Embankment Bridge to immediately upstream of the confluence with the Taipo Stream is referred to as the 'Middle Estuary' or 'outfall channel' and the area above the confluence with the Taipo Stream is referred to as the 'Upper Estuary'. The area seaward of the Pandora Bridge is known as the Inner Harbour and is not identified as part of the estuary.

11. Figures 1 and 2 below show the extent of the Ahuriri Estuary and its location in Hawke's Bay.

Figure 1: Extent of Ahuriri Estuary

Figure 2: Location of Ahuriri Estuary

*Cultural values**

12. Three Treaty settlement entities have customary linkages to Te Whanganui-ā-Orotu - Ahuriri Hapū, Ngāti Pāhauwera and Maungaharuru –Tangitū.

13. For the Ahuriri Hapū, Te Whanganui-a-Orotū has always held an elevated status, with its own mauri, wairua and spirituality. It is central to their existence and identity. It is named after the ancestor Te Orotu, who was a descendant of the great explorer and ancestor Māhu Tapoanui, who is the very beginning of the Ahuriri people.

14. Ngāti Pāhauwera regularly travelled between Mohaka and Te Whanganui- a -Orotū, which was a significant mahinga kai for them. A Ngāti Pāhauwera pā and kāinga are located at the northern end of Te Whanganui-a-Orotū and graves of Ngāti Pāhauwera ancestors are located on islands previously in Te Whanganui-a-Orotū.

15. Maungaharuru Tangitū also state an association with Te Whanganui-a-Orotū; the estuary was a vitally important fishing and resource-gathering area for hapū.

16. The area around Te Whanganui-a-Orotū was a very important source of food and was heavily populated. Consequently numerous sites of cultural, historic and archaeological significance are situated around what was its shoreline.

17. From the earliest of times it was highly prized for its enormous food resources and its access to major river systems and forest areas. In the lake were extensive shellfish beds and fishing grounds; in the rivers and streams, eels and freshwater fish. It was known as 'a place of abundance' for freshwater fish, shellfish, and birds and much prized as a food resource by the people.

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18. It was also known as Te Maara a Tawhao (the garden of Tawhao) by Ngāti Kahungunu, Tawhao being the chief who imposed a tapu on it. So greatly was it valued through the generations that songs were sung, poetry composed and dances created in praise of its productiveness.

19. Archaeological evidence confirms that Te Whanganui-a-Orotū was an important place to live. Excavations indicate settlement dates between the late fifteenth and early seventeenth centuries, with very early settlement on Roro o Kuri - somewhere between the twelfth and thirteenth centuries. Surrounding the harbour are 11 recorded pā, some extensive in size. Extensive middens exist in this area.

20. The pā at Te Pakake was a communal gathering place in times of trouble. Ngāti Hinepare, Ngāti Mahu, Ngāti Parau, Ngāti Hawea and Ngāti Kurumokihi are all recorded as having occupied the pā when under threat of invasion. After the Waikato and Hauraki tribes attacked Te Pakake in 1824, the people of Heretaunga went into exile at Mahia peninsula. This invasion caused large scale devastation to the local people. They remained in exile until after the signing of the Treaty of Waitangi in 1840. No pā and kāinga in use prior to the exodus were re-occupied upon their return because they had blood spilt on them and they were now urupā and tapu.

21. Attachment 1 contains a more detailed explanation of the cultural values associated with Te Whanganui-a-Orotū.

Recreation values

22. The Ahuriri Estuary is easily accessible by large numbers of people, making it a highly valued recreational resource in Hawke's Bay.

23. The lower estuary features broad tidal flats and shallow channels with a partial impoundment area known as Pandora Pond, which is a small sheltered area that has been extensively developed to allow a range of recreational activities to take place.

24. Recreational use of the lower estuary area is quite intensive and includes swimming, boating, fishing, birdwatching, photography and food gathering. A number of walkways and cycle pathways have been developed around the upper and lower estuary making it popular for walking, running and biking.

25. The middle reaches of the estuary is generally undisturbed by water sports due to the lengthy periods in which tides expose large areas of mudflats. As a result, it attracts shorebirds and is popular for bird-watching. Recreational pursuits on the upper estuary are restricted to bird-watching and duck shooting.

26. The water quality of the Ahuriri Estuary is fair to poor, meaning a number of the contact recreational activities can be compromised by the presence of elevated bacterial concentrations that have the potential to cause illness. The estuary was closed intermittently during 2018 for swimming and boating activities.

27. In the past, Te Whanganui a Orotū was a rich food source with cockles and flounder commonly gathered from the area. However, due to the inflow of stormwater derived from the surrounding industrial and urban area, and the associated toxins, the estuary is not currently regarded as a safe food-source.

28. In 2004, the Ahuriri Estuary was recognised as a Potential Water Body of National Importance for recreation by the Ministry for the Environment.

Ecology values

29. The Ahuriri Estuary is the most significant wetland along the coastline of the North Island between East Cape and Wellington. Despite extensive modification, reclamation and discharges, it continues to provide a wide diversity of habitat and an extremely diverse range of ecological communities, all contained within a relatively small area.

30. There are five smaller wetlands, around 175 ha in size which are part of the greater Ahuriri wetland complex. These wetlands are located within reclaimed land near the estuary and are considered to contribute significantly to the overall ecological value of the area.

31. The Ahuriri Estuary has very important wildlife values and is highly rated in the 'wetlands of ecological and representative importance', and the 'sites of special wildlife interest' databases held by the Department of Conservation.

32. Notably, in 1996 the Ahuriri Estuary was identified as meeting the Ramsar Sites Criteria which is part of an intergovernmental treaty and used to assist countries to identify wetlands of international importance.

33. Ecological values associated with the Ahuriri Estuary are discussed in more detail in the following sections.

Fish

34. The Ahuriri Estuary is classified as a nationally significant fisheries habitat. Within Hawke Bay, the Ahuriri Estuary provides a diverse habitat and is the most important estuary in terms of fisheries production. It provides nursery habitat, spawning habitat and feeding areas and is used by species migrating between freshwater and the sea. In the late 1980s it was under consideration for marine reserve status.

35. The estuary makes a significant contribution to Hawke's Bay marine fisheries, supporting approximately 29 species of fish at some stage during their life cycle. Some species (e.g. short finned eel, kahawai, grey mullet, yellow-bellied flounder, stargazer and parore) use the area for feeding, and around 11 species use the area as a nursery or spawning ground. These include commercially important species such as yellow bellied flounder, grey mullet, sand flounder, common sole, and yellow-eyed mullet.

36. In 1987, the Ahuriri Estuary and Westshore lagoons were identified as a wetland of national importance to fisheries and allocated a Category A (outstanding) rating for fisheries. The wetland met the following five criteria:

- A unique or diverse assemblage of fish species
- A biologically or scientifically important fishery or fish habitat
- A particularly good example of a specific type of fishery or fish habitat
- A remnant or regionally representative wetland with significant fisheries values
- A nationally important non-salmonid fishery, including commercial and traditional Māori fisheries.

37. In 1996, the Department of Conservation identified the Ahuriri Estuary as meeting the Ramsar Sites Criteria which identifies wetlands of international importance. In respect to native fish the report notes:

- The estuary supports 29 species of fish which adds to the estuary's special value for maintaining the genetic and ecological diversity of the region
- The estuary has special value as a breeding ground and nursery for a number of species of fish.

Wildlife

38. The Ahuriri Estuary contains a 160 hectare wildlife refuge which protects the areas between the Southern Marsh, Westshore Lagoon and the estuary from the low level bridge to Pandora Pond. The Department of Conservation manages the wildlife sanctuary which is highly ranked as a Site of Special Wildlife Interest (SSWI) in their database.

39. The Ahuriri Estuary is used by over 70 species of waterbirds, 17 of which migrate here every year from the Artic. Of particular note are the Australasian bittern and the black billed gull which are globally endangered, and the New Zealand Dabchick (Grebe), which is globally near threatened. The estuary regularly supports over 1% of the regional population of Caspian tern.

40. The Wrybill is also present at the Ahuriri Estuary. The Wrybill is special, being endemic to New Zealand and the only species of bird in the world with a beak that is bent sideways one way. Other notable species which use the estuary are the Royal spoonbill, white faced heron, grey teal, New Zealand marsh crake, blackfronted dotterel, Pacific reef egret, banded dotterel, far eastern curlew, Asiatic whimbrel, American whimbrel, Siberian tattler, sharp-tailed sandpiper, red-necked stint, Caspian tern and little tern.

41. The following map, Figure 3, shows the 12,000 km flight of the eastern bar-tailed godwits which migrate to New Zealand every year from Alaska. The godwits fly nine days straight and when they land on New Zealand shores they need food almost immediately.

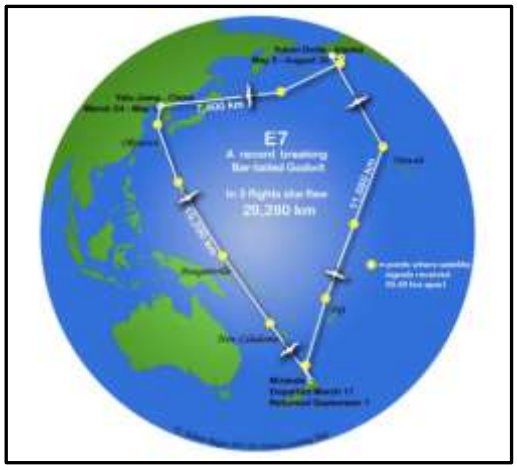

Figure 3: Flight of the eastern bar-tailed godwits

42. In 1996, the Department of Conservation identified the Ahuriri Estuary as meeting the Ramsar Sites Criteria, which identifies wetlands of international importance. With regard to waterbirds the report notes:
    - The Estuary supports appreciable numbers of three globally threatened species of birds, the New Zealand grebe, New Zealand dabchick (Grebe), Australasian bittern and the Wrybill
    - The estuary supports a very diverse fauna, including 55 species of birds which adds to the estuary's special value for maintaining the genetic and ecological diversity of the region
    - The estuary is of special value as a wintering area for migratory shorebirds
    - The estuary regularly supports over 1% of the regional population of the Caspian tern.

Flora

43. The Ahuriri Estuary is highly modified and does not support any plant or plant communities of importance or rarity. For these reasons, the area is described as being of 'moderate botanical interest'.

44. The margins of the estuary support a salt-marsh herbfield of *Zostera*, glasswort, and shore pimpernel, with *Juncus* and *Leptocarpus* rushland on higher ground.

45. The native shore-line communities in the lower estuary are in a healthy state. A small remnant stand of the saltmarsh ribbon wood *Plagianthus divaricatus* survives in the lower estuary, and serves as a reminder of the far more extensive areas present prior to the 1931 earthquake and subsequent reclamation. This is of local importance because of the low occurrence of this species throughout Hawkes Bay.

46. In the upper estuarine section, extending northwards from the Taipo stream confluence, there are substantial remnants of the once extensive wetlands that bordered Ahuriri Lagoon.

47. The native communities in the Westshore Pond, Northern Pond and adjacent areas contain the aquatic plant *Ruppia polycarp*a and *R. megacarpa.* These ponds potentially may be one of the best sites for these uncommon plants in the North Island.

48. The saline arm extending west from Westshore Pond, represents a kind of habitat not very common in New Zealand. Its most characteristic plant *Puccinellia fasciculate* is not a native species. The northern pond extension (up into airport land) contains sea-rush and native herbfield.

Invertebrates

49. Thirty-three species of invertebrates have been recorded in the Ahuriri Estuary, including: three species of bivalves, the most abundant being the cockle *austrovenus stutchburyi*; seven gastropods including whelk *Cominella glandiformis* and hornshell *Zeacumantus lutulentus*; six crustaceans, the most common being the tunnelling mud crab *Austrohelice* crassa; 14 polychaete worms, the most numerous being *Aonides trifidus* and *Scolecolepides*; and one nemertine worm.

50. The aquatic infauna sampling indicates there is low diversity and abundance of organisms in the upper estuary area. This appears to be because these waters are in an enriched (trophic) state, with a significant

amount of sediment and contaminants flowing in through the small streams. There is a plentiful supply of algae and plankton that flourish in the enriched waters of the estuary.

51. The invasive fanworm *(Ficopomatus enigmaticus*) is a risk to native marine species and is thriving in the upper estuary and is fast becoming prolific in the estuary waters. In 2017, reefs of tube worms were restricting water flow between the upper and the lower estuary and 216 tonnes of tubeworms were removed by Hawke's Bay Regional Council staff.

52. In 1996, the Department of Conservation identified the Ahuriri Estuary as meeting the Ramsar Sites Criteria, which identifies wetlands of international importance. The report specifically notes that the estuary supports 33 species of invertebrates which adds to the estuary's special value for maintaining the genetic and ecological diversity of the region.

Landscape / scenic values

53. The Ahuriri Estuary is located in an urban landscape situated directly alongside the city of Napier, adjacent to a number of industrial and urban areas. There is a network of well-formed tracks around the lower estuary and associated wetland areas. Photographs of Te Whanganui-a-Orotu are contained in Attachment 2.

54. The estuary is a long, narrow estuary with its wide range of fresh to salty, shallow to deep, and sandy to muddy habitats. The estuary is relatively shallow, with about 60% of its bed being exposed at low tide.

55. The Ahuriri Estuary is identified in the Napier District plan as an area possessing value as a significant landscape.

Geological features

56. In 1931, a magnitude 7.8 earthquake hit Hawke's Bay instantly lifting the land by 1 - 2 metres and exposing about 1300 hectares of the original Ahuriri Lagoon. As a result, the area has been significantly studied and is considered to be a nationally important example of tectonic processes.

57. The Hawke's Bay Regional Coastal Environment Plan identifies The Ahuriri Estuary as being a nationally important example of tectonic processes, with the former floor of the lagoon, and uplifted channel fossils specifically identified as having Significant Conservation Values (SCA).

58. In 2004, the Ahuriri Estuary was recognised as a Potential Water Body of National Importance for geodiversity features by the Ministry for the Environment.

59. The National Geo-preservation Inventory, which identifies and ranks geological features according to their relative significance, classifies the following features of the Ahuriri Estuary as nationally significant:

- Ahuriri Lagoon 1931 uplifted seafloor and islet: Small islet from pre-1931 now sitting in the middle of uplifted farmed grassland which was formerly the intertidal lagoon floor
- Ahuriri Lagoon uplifted entrance channel fossils. Best illustration of 2.5 m of uplift during the 1931 Napier Earthquake, in the form of in-situ bivalues (ruditapes) in life position in channel bottom gravelly sand now exposed at high tide level.

Naturalness/intactness of waterbody

60. The Ahuriri Estuary is a remnant of a much larger lagoon. There have been major changes within the Ahuriri Estuary which pre-1931 was predominately freshwater and approximately 3,800 ha hectares size. Historically the Tutaekuri and Esk Rivers previously discharged into the lagoon.

61. In 1931, the Napier earthquake lifted the land by two metres and exposed around 1,300 hectares of original lagoon. This combined with a significant amount of modifications through drainage and reclamation has reduced the lagoon to its current 470 hectare size.

62. Much of the margin of the estuary is contained by man-made stop-banks, and the Tutaekurī and Esk Rivers, which originally flowed into the estuary have been diverted away. The approaches to the Pandora Bridge constrict tidal flow into and out of the estuary, delaying and muting tidal influences. Pandora Pond was artificially created when sediment was excavated in 1977 to provide fill for the cargo handling area in the Port of Napier.

63. In the upper estuarine section there are substantial remnants of the once extensive wetlands that bordered Ahuriri Lagoon.

Water Quality

64. Water quality in the estuary has been monitored for a number of years. During this time, monitoring indicates that water quality in the lower estuary is generally 'fair' for contact recreational purposes. An active swimming warning is currently in place for Pandora Pond which states 'Caution Advised'.

65. A 'fair' grading and a 'caution advised' warning indicate the waters are generally suitable for swimming. However, overall the site has a moderate infection risk and elevated bacteria concentrations can occur at times and caution is required during periods of heavy rain or when the water is discoloured.

66. During the summer of 2017/18, the lower estuary was closed intermittently due to levels of faecal indicator bacteria that exceeded national guidelines for contact recreation. Investigations are continuing as to the cause, however generally faecal contamination of the estuary is associated with stormwater inflows, runoff from industrial sites, rural land uses and direct deposition of faeces by the high numbers of birds.

67. The water quality of the upper estuary is in an enriched (trophic) state. Sediment and contaminants flow in through the small streams (such as the Taipō Stream), degrading the habitat for marine life and birds.

Values Summary

Overarching Value	Sub-value	Description	Outstanding Yes/no	Comments
Cultural	TBC	TBC	TBC	TBC
Recreational	TBC	TBC	TBC	TBC
Ecological	TBC	TBC	TBC	TBC
Landscape	TBC	TBC	TBC	TBC
Natural Character	TBC	TBC	TBC	TBC

Attachment 1

Te Whanganui-a-Orotū – Cultural Values Report

Ahuriri Estuary – Pre Earthquake

Key Cultural Values
Spiritual values
Wāhi Tapu, wāhi taonga, wai tapu
Mahinga kai, Pā tuna
Pā, Kāinga
Rohe boundary

Table 1: List of documents reviewed

Year	Name	Author
1992	Te Whanganui-a-Orotū, Traditional Use and Environmental Change, Customary Usage Report, Wai 55.	Patrick Parsons
1995	Te Whanganui-a-Orotū report, Wai 55	Waitangi Tribunal
1996	Waiohikī Land Claim, Wai 168	Roy Casey Pewhairangi
2004	Wai 201: The Mohaka ki Ahuriri report	The Waitangi Tribunal
2006	Areas of Significant Conservation Values: HB Coastal Marine Area (HBRC Report Number 4203 - Draft)	Hawke's Bay Regional Council
2007	He Moemoea mō Te Whanganui-a-Orotū: A Vision Plan and Health Assessment for the Napier Estuary	Landcare Research
2010	Ngāti Pāhauwera Deed of Settlement Documents	Ngāti Pāhauwera and the Crown
2012	Submission from Te Taiwhenua o Heretaunga on Proposed Plan Change 5 to the RPS	Te Taiwhenua o Heretaunga
2015	Environment Court Decision: NKII vs HBRC	Environment Court
2015	Mana Ake - Nga Hapu o Heretaunga – An Expression of Kaitiakitanga	Te Taiwhenua o Heretaunga
2016	Maungaharuru-Tangitū Deed of Settlement Documents	Maungaharuru-Tangitū and the Crown
2016	Heretaunga Tamatea Deed of Settlement Documents	Heretaunga Tamatea and the Crown
2016	Ahuriri Hapū Deed of Settlement Documents	Ahuriri Hapū and the Crown
2017	Mai Te Matau a Māui ki Tangoio Assessment of Cultural Values Report: Clifton to Tangoio Coastal Hazards Strategy 2120	Aramanu Ropiha
2018	Cultural Values Table	Hawke's Bay Regional Council

1. Introduction *

Purpose

The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with Te Whanganui-a-Orotū are outstanding for the purposes of the Hawke's Bay Regional Council's outstanding water body plan change.

This report presents the summarised findings of the cultural values attributed to Te Whanganui-a-Orotū in those documents referred to in Table 1, above.

The report summarises the cultural values associated with Te Whanganui-a-Orotū into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all of the waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Importance

Three Treaty settlement entities have customary linkages to Te Whanganui-a-Orotū - Ahuriri Hapū, Ngāti Pāhauwera and Maungaharuru –Tangitū.

Te Whanganui-a-Orotū is a place of great cultural and spiritual significance to the Ahuriri Hapū - one of six large natural groups negotiating the settlement of Ngāti Kahungunu Treaty of Waitangi claims. It is central to their existence and identity. It is named after the ancestor Te Orotū, who was a descendant of the great explorer and ancestor Māhu Tapoanui, who is the very beginning of the Ahuriri people.

Ahuriri hapū has a long history of settlement in Te Whanganui-a-Orotū; it's significance is conveyed in song and story, reciting the names of ancestors, kaitiaki and events. The hapū of Ngāti Parau, Ngāti Hinepare, Ngāti Tu, Ngāti Mahu, Ngāi Tawhao, Ngāi Te Ruruku, Ngāti Matepu all lived on the shores of Te Whanganui-a-Orotū.

The area around Te Whanganui-a-Orotū was a very important source of food and was heavily populated. Consequently numerous sites of cultural, historic and archaeological significance are situated around what was its shoreline.

Ngāti Pāhauwera describe Te Whanganui-a-Orotū as a 'taonga' referred to in their tribal whakatauki, karanga, and waiata. Ngāti Pāhauwera regularly travelled between Mohaka and Te Whanganui-a-Orotū, which was a significant mahinga kai for them. A Ngāti Pāhauwera pā and kāinga are located at the northern end of Te Whanganui-a-Orotū and graves of Ngāti Pāhauwera ancestors are located on islands previously in Te Whanganui-a-Orotū. The area is significant as a boundary of their tipuna Te Kahu o Te Rangi.

Maungaharuru–Tangitū (another entity negotiating the settlement of Ngāti Kahungunu Treaty of Waitangi claims) also state an association with Te Whanganui-a-Orotū. The estuary was a vitally important fishing and resource-gathering area for the hapū.

TANK Group

The TANK Group has been working since 2012 on land and water management issues for the Tutaekurī, Ahuriri, Ngaruroro and Karamū catchments. Its purpose is to recommend limits and measures for a workable plan change. TANK's collaborative membership includes more than 30 groups, representing Tāngata Whenua, primary sector, councils and environmentalists.

The TANK group has been progressing a cultural values framework, identifying values and attributes to characterise water quality.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

2. Spiritual Values

For the Ahuriri hapū, Te Whanganui-a-Orotū has always held an elevated status, with its own mauri, wairua and spirituality.

Moremore

Moremore is the kaitiaki of Te Whanganui-a-Orotū, and known as the guardian of the people occupying the shores of Te Whanganui-a-Orotū who are his descendants. The appearance of Moremore warned people of dangers and reinforced the customs practiced by the old people. The law of Moremore was always observed.

Moremore lived in a cave in the sea just off Sturm's Gully. His mother, Pania, is identified with the same locality. A characteristic of Moremore was his ability to appear in any guise such as a shark, stingray or octopus. Because of his descent from the sea taniwha Tangaroa, he had command of the forces of the deep.

An incident linking Pania and Moremore to the 1931 earthquake highlights the importance of these ancestors in the lives of the people. According to Kurupai Koopu, when they started blowing up Pania's Rock in about 1929, Pania was angry with them and Moremore was seen in a form that he had never been before - that of a completely black shark with no tail. On the morning of the 1931 earthquake, Moremore was seen by old Wereta Te Kape inside the Ahuriri Heads. Two young men saw him too. One raised a rifle and fired at him. Shortly afterwards the great quake struck.

The Tareha family were decedents of Moremore and enjoyed special privileges when gathering kaimoana from his cave. However, the special rights enjoyed by the Tareha's to kaimoana near Moremore's cave were balanced by the sacrifice that accompanied it - Moremore's right to the firstborn son of each generation, who was claimed by Hinewera, the lady of the sea.

There are many traditional customs surrounding Te Whanganui-a-Orotū. Older tribe members were very religious and strictly observed certain customs, such as using new flax baskets at the start of each fishing season, saying a karakia before anyone entered the water, not gathering shellfish during menstruation, or eating shellfish on the beach while anyone was still in the water. If Moremore appeared while you were out in the water you had to abandon your catch.

The island Tapu Te Ranga was a sacred place where certain tohi or baptismal rites were performed.

3. Wāhi tapu, wāhi taonga

Te Whanganui-a-Orotū contained islands where people lived and camped while on fishing expeditions, as well as wāhi tapu and urupā.

Te Roro o Kuri (dog's brains) was the biggest island in the lagoon, an octopus-shaped island which had ancient pā sites on almost every tentacle. It is wāhi tapu.

After the invasion of the Waikato and Hauraki tribes (outlined in section 7), the people of Heretaunga remained in exile at Nukutaurua until after the signing of the Treaty of Waitangi in 1840. No pā and kāinga in use prior to the exodus were re-occupied upon their return because they had blood spilt on them and they were now urupā and tapu.

4. Mahinga kai

Te Whanganui-a-Orotū was a significant mahinga kai resource. From the earliest of times it was highly prized for its enormous food resources and its access to major river systems and forest areas. In the lake were extensive shellfish beds and fishing grounds; in the rivers and streams, eels and freshwater fish. It was known as ‘a place of abundance' for freshwater fish, shellfish, and birds and much prized as a food resource by the people. It was also known as Te Maara a Tawhao (the garden of Tawhao) by Ngāti Kahungunu, Tawhao being the chief who imposed a tapu on it. So greatly was it valued through the generations that songs were sung, poetry composed and dances created in praise of its productiveness. It was the most valuable part of the patrimony.

Different parts of Te Whanganui-a-Orotū favoured different types of kaimoana and natural markers were used to indicate different fishing grounds. There were tribal fishing zones, communal fishing areas and ancestral zones, which various sub-tribes with ancestral and occupational rights felt free to fish.

The traditional Māori view of Te Whanganui-a-Orotū was that of a fresh-water or brackish-water lagoon which had to be opened occasionally when the waters from the streams feeding it caused the water-level to rise to a point that menaced their homes and cultivations situated on the low ground bordering the lake. Māori

tradition relates how openings to the sea were made at Keteketerau and Ruahoro near Petane, and at Ahuriri near Mataruahou (Scinde Island). While the lake was open to the sea certain sea-fish would enter, but the main catch was of fresh-water fish.

5. Pā, Kāinga, ara

Archaeological evidence confirms that Te Whanganui-a-Orotū was an important place to live. Excavations indicate settlement dates between the late fifteenth and early seventeenth centuries, with very early settlement on Roro o Kuri - somewhere between the twelfth and thirteenth centuries. Surrounding the harbour are 11 recorded pā, some extensive in size. Extensive middens exist in this area.

Te Whanganui-a-Orotū contained islands where people lived and camped while on fishing expeditions. Te Roro o Kuri (dog's brains) was the biggest island in the lagoon, an octopus-shaped island which had ancient pā sites on almost every tentacle.

Two of these pā, Otiere and Otaia, had a long history in tribal warfare before the exodus to Mahia. Ngāti Hineterangi and Te Hika O Te Rautangata were the principal inhabitants of the island pā until around 1760-1780. From around 1760 – 1820 Ngāti Hineterangi, Te Hika 0 Te Rautangata, Ngāi Te Ruruku, Ngāti Tu, Ngāti Hinepare and Ngāti Mahu all occupied the pā.

Kouturoa, Tiheruheru and Ohuarau were the principal settlements of Ngāti Hinepare and Ngāti Mahu on the shores of Te Whanganui-a-Orotū between 1810 and 1824. Tiheruheru was known as a canoe landing with the kāinga located directly on the hill above. Ohuarau and Kouturoa were fortified pā at the southern entrance to Kouturoa Bay, just east of Tiheruheru, respectively. Kouturoa is within the boundaries of the Whareranga Native Reserve and the fortified earthworks are still visible.

The pā at Te Pakake was a communal gathering place in times of trouble. Ngāti Hinepare, Ngāti Mahu, Ngāti Parau, Ngāti Hawea and Ngāti Kurumokihi are all recorded as having occupied the pā when under threat of invasion.

Pukemokimoki was a fortified pā, with a canoe landing place near, located at south-western end of Mataruahou (Napier Hill).

Figure 1: Ahuriri harbour and roadstead in the 1850s. Shows a pā and small Pākehā settlement.

6. Conflict

The island pā - Te Iho o Te Rei, Otaia and Otiere were the location of a number of significant battles including the great battle called Otoparuparu at Otaia River, the battle of Te Kaipo (after which twenty posts were set with the heads of the people slaughtered), and the battle at Te Iho 0 Te Rei, where the musket or pu was first experienced in Hawkes Bay. Because of the numbers killed in the fight on Te Iho o te Rei, one hapū still carries the name Ngāti Matepu, or 'death by the gun'.

These pā were abandoned when the people of Heretaunga went into exile at Mahia peninsula, after the Waikato and Hauraki tribes attacked Te Pakake in 1824. The battle of Te Pakake caused large scale devastation to the local people.

The Waikato and Hauraki tribes, together with others came to Ahuriri with one thousand warriors, and besieged the pā of Te Pakake in revenge for the death of Tukorehu's son, Te Arawai, killed at Roto A Tara.

So disastrous was the defeat, that the most important Hawke's Bay chiefs – including Takamoana, Tareahi, Paora Kaiwhata (who was then only a child), Te Hapuku, Tiakitai, and Kurupo Te Moananui – were all captured in battle. All but Chief Tiakitai fled the area 18 months later when they were released.

The people of Heretaunga remained in exile at Nukutaurua until after the signing of the Treaty of Waitangi in 1840. No pā and kāinga in use prior to the exodus were re-occupied upon their return because they had blood spilt on them and they were now urupā and tapu.

7. Rohe boundary

A Ngāti Pāhauwera pā and kāinga are located at the northern end of Te Whanganui-a-Orotū and graves of Ngāti Pāhauwera ancestors are located on islands previously in Te Whanganui-a-Orotū. The area is significant as a boundary of their tīpuna Te Kahu o Te Rangi.

8. Archaeology

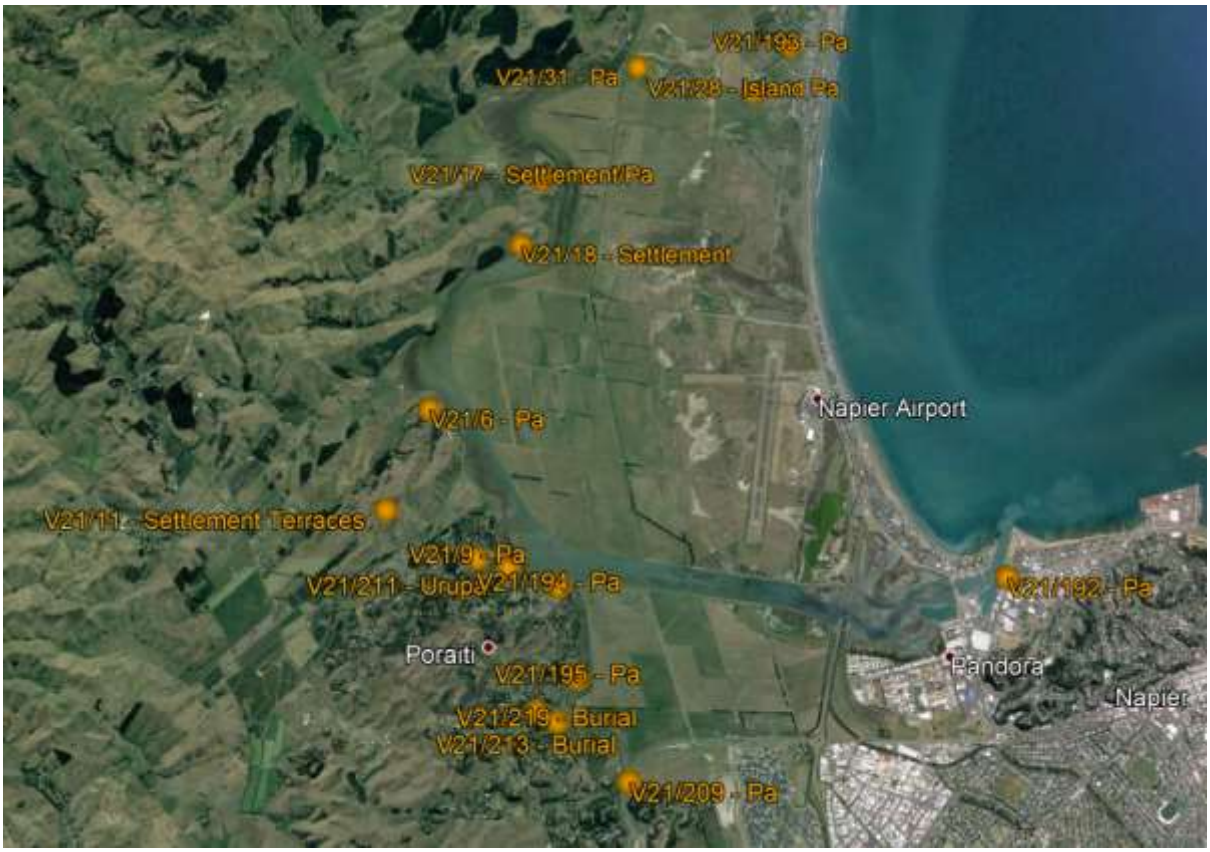

Figure 2: Archaeological Sites around Te Whanganui-a-Orotū. Please note, many middens, pits, and terraces are not shown for easier viewing.

9. Statutory Acknowledgement Area of Interest

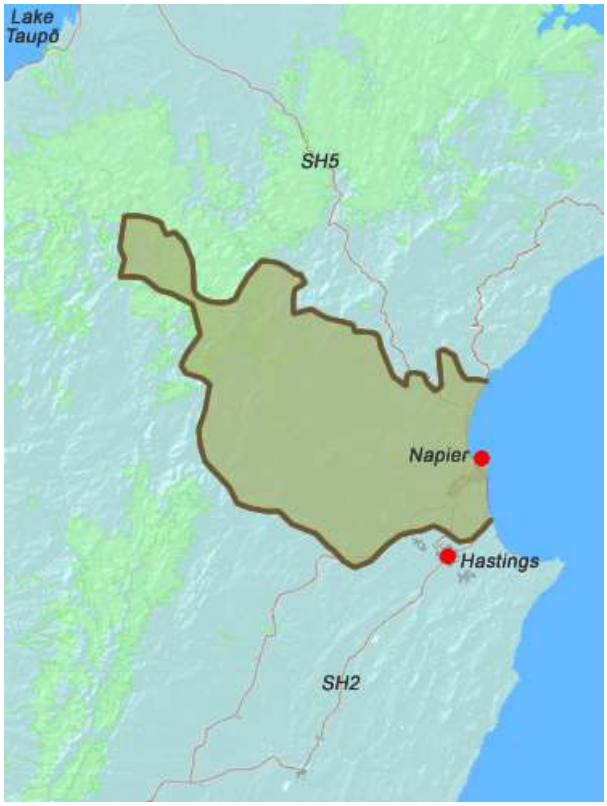

Figure 3: Ahuriri Hapū Area of Interest

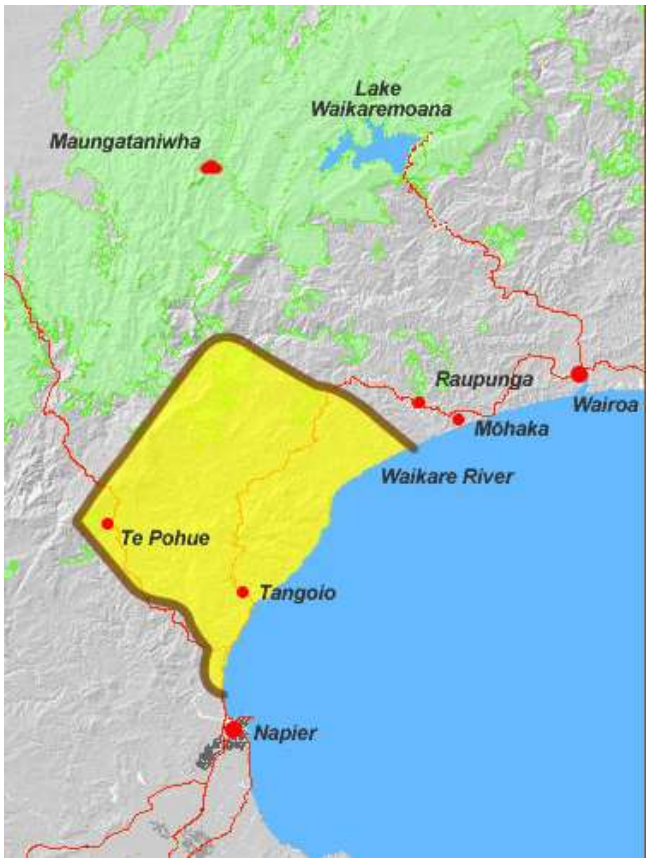

Figure 4: Maungaharuru-Tangitū Area of Interest

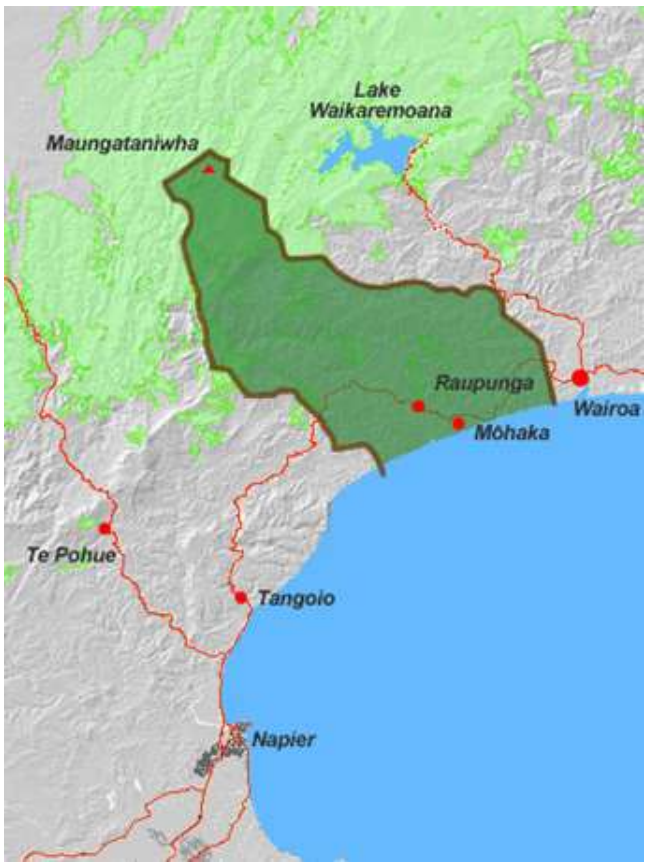

Figure 5: Ngāti Pāhauwera Area of Interest

10. Resource Management Plans

The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to Te Whanganui-a-Orotū. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Regional Coastal Environment Plan
Stock Management Areas – Upper Ahuriri Estuary Estuary is within Significant Conservation Area 1 (SCA12)

Attachment 2:

Photographs - Te Whanganui-a-Orotū

Tukituki River

Key Values
Cultural
Recreation (angling, boating)
Ecology (wildlife, fisheries)
Natural Character

Table 1: List of documents reviewed

Year	Name	Author
1966	An Encyclopaedia of New Zealand	T.L Grant-Taylor
1979	64 New Zealand Rivers	Egarr, Egarr & Mackay
1981	New Zealand Recreational River Survey	G & J Egarr
1982	Submission on the Draft Inventory of Wild and Scenic Rivers of National Importance	Ministry of Agriculture and Fisheries
1984	The Relative Value of Hawke's Bay Rivers to New Zealand Anglers	Fisheries Research Division - N.Z. Ministry of Agriculture and Fisheries
1986	A List of Rivers and Lakes Deserving Inclusion in A Schedule of Protected Waters	Grindell & Guest
1988	Wildlife and Wildlife Habitat of Hawke's Bay Rivers	G.R. Parrish
1994	Conservation Management Strategy (volume II) for Hawke's Bay Conservancy 1994 – 2004.	Department of Conservation
2003	Hastings District Plan	Hastings District Council
2004	Potential Water Bodies of National Importance	Ministry for the Environment
2004	Potential Water Bodies of National Importance for Recreation Value	Ministry for the Environment
2006	Areas of Significant Conservation Values: HB Coastal Marine Area (HBRC Report Number 4203 - Draft)	Hawke's Bay Regional Council
2008	Wetland Review Monitoring	Hawke's Bay Regional Council

2009	Angler Usage of Lake and River Fisheries Managed by Fish & Game New Zealand: Results from the 2007/08 National Angling Survey- NIWA	Martin Unwin
2010	Recreational Use of Hawke's Bay Rivers – Results of the Recreational Usage Survey 2010	Hawke's Bay Regional Council
2011	Tukituki Catchment Terrestrial Ecology Characterisation	MWH Global
2012	River Values Assessment System (RiVAS)	Lindis Consulting
2012	Tukituki River Catchment Cultural Values and Uses	Te Taiwhenua O Tamatea & Te Taiwhenua O Heretaunga
2014	Jet Boating New Zealand – Rivers Information	Jet Boating New Zealand
2015	Report to Decision Maker, Dispensation and Approval under the Freshwater Fisheries Regulations 1983	Department of Conservation
2016	Heretaunga Tamatea deed of settlement + documents schedule	Heretaunga Tamatea and the Crown
2016	Values and Management of Lowland Braided Rivers for Birds	C. O'Donnell
2016	Tukituki River Catchment. Sate and Trends of River Water Quality and Ecology 2004 – 2013	Hawke's Bay Regional Council
2017	Upper Tukituki Flood Control Scheme – Asset Management Plan	Hawke's Bay Regional Council
2018	Tukituki River Trout and Fly Fishing	NZ fishing website
2018	Cultural Values Table	Hawke's Bay Regional Council
2018	Land Air Water Aotearoa (LAWA)	Hawke's Bay Regional Council
2018	Huge colony of rare tarāpuka discovered at Tukituki River, Hawke's Bay	Stuff.co.nz
2018	Contamination of Tukituki River and Maraetotara Lagoon prompts warnings from Hawke's Bay District Health Board	Hawke's Bay Today
2018	Toxic algae found in Hawke's Bay's Tukituki River	Stuff.co.nz
2018	Tukituki Catchment – Healthier Water in the Tukituki Catchment	Hawke's Bay Regional Council
2018	Tukituki in New Zealand	Protected Planet
2018	The world's most threatened gull calls New Zealand home, but most kiwis don't know it	Stuff.co.nz
2018	Black billed gull/tarāpuka	Department of Conservation

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the values of the Tukituki River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

2. This report presents the summarised findings of the values attributed to the Tukituki River in those documents referred to in Table 1, above. In accordance with decisions made by the RPC in June 2017, economic and consumptive use values have not been discussed in detail in this report.

Overview

3. The Tukituki River is a large gravel braided river system which rises in the Ruahine Ranges flowing into the sea 117 km later at Haumoana. It is one of two major rivers flowing across the Ruataniwha Plains and has a total catchment area of approximately 2,500 km^2. The river is highly valued for salmonid angling.

4. The Tukituki River is made up of a number of separate rivers which flow across the Ruataniwha Plains, including the Makaretu, Tukipo, and Waipawa Rivers. These rivers and streams all merge into the Tukituki River east of Waipukurau. The Tukituki River has a high degree of interaction with the Ruataniwha aquifer.

5. The Tukituki River is a tupuna awa (ancestral river) and has significant cultural values. Legend tells of how the Tukituki River came into existence. Two taniwha lived in a large lake situated on what is now the Ruataniwha Plains. They fought for possession of a boy who accidentally fell into the lake and their struggles formed the Waipawa and Tukituki Rivers which drained the lake.

6. The River is highly valued for productive uses, providing water for farms and orchards from Central Hawke's Bay through to the eastern corner of the Heretaunga Plains. It is partially enclosed by stop banks in parts to prevent flooding of the surrounding land. During the 1880's when farming was developing, barges used to travel down the river carrying wool from Waipawa to deliver to freighters off the coast of Haumoana.
7. Despite significant modifications, the Tukituki Estuary has high fisheries and wildlife values, and is listed as a Significant Conversation Area in the Hawke's Bay Regional Coastal Environment Plan. The Tukituki catchment has been identified as one of the six 'environmental hotspots' by Hawke's Bay Regional Council, and funding has been allocated towards improving the area.
8. During summer, when water levels are low, parts of the Tukituki River are subject to potentially toxic cyanobacteria blooms, which can be a health risk for people and animals.

Location

9. The Tukituki River rises in the Ruahine Ranges, flowing north from southern Central Hawke's Bay and into the Pacific Ocean approximately 9 km south of Napier.
10. The location and extent of the Tukituki River can be seen in Figures 1 and 2, below.

Figure 1: Location of Tukituki River

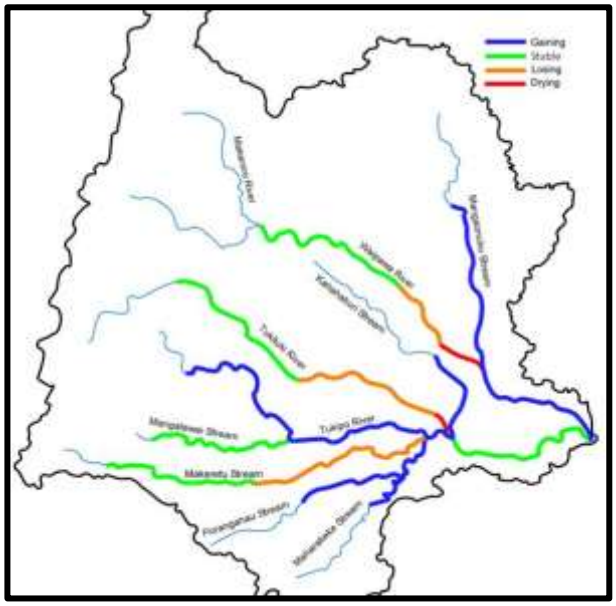

Figure 2: Rivers and Streams - Ruataniwha Plains

*Cultural values**

11. The Tukituki River is a significant waterway for Heretaunga Tamatea. The river is a tīpuna (ancestor). It is integral to the web of whakapapa connections shared by the different hapū along its banks. It provides hapū with a sense of identity and interconnectedness as it runs through their lives.
12. A narrative exists on the way in which the Tukituki River came into existence. A large lake was located in what is now the Ruataniwha Plains. Two taniwha lived in this lake. On one occasion a boy fell into the lake and the two taniwha fought over their prey. The resulting destruction on the landscape created breaks in the hills through which the lake drained away. One of the channels was the Tukituki River.
13. After the arrival of the Ngāti Kahungunu tīpuna to Heretaunga, the Tukituki River was established as the first boundary between Taraia, who took the land to the west of this river, and Te Aomatarahi who took the land to east and south of the river.
14. Historically, the Tukituki catchment had an abundance of mahinga kai and natural resources. The river was a significant food source central to the well-being of Heretaunga Tamatea. In particular, the river mouth and estuary was renowned for the abundance of fish species that were taken there, which included kahawai, pātiki, kanae, kataha, kokopu, inanga and tuna. The estuary area continues to support important traditional fisheries for kahawai, flatfish, whitebait and smelt. Many whānau come annually to do their fishing from the

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

mouth of the Tukituki awa at Haumoana through to an area off Tenants Rd referred to as Te Ahikoura (the place to fire and cook crayfish).

15. The river was traditionally the highway that connected whānau to other whānau, to their gardens, to trade links, to their pā sites, to their waahi tapu and to their waahi tupuna. Much of the Tukituki River was navigable by canoe in the winter time and was the main transport route through Heretaunga for much of the nineteenth century.

16. Attachment 1 contains a more detailed explanation of the cultural values associated with the Tukituki River.

Recreation values

17. The Tukituki River is popular for a range of recreational activities such as fishing, swimming, boating, whitebaiting and bird watching. The recreational activities associated with the Tukituki River have been discussed in a number of nationally published documents over the last 40 years.

18. During the warm summer months, slime and algae builds up in the Tukituki River making the river unsightly, and sometimes unsafe, which severely impacts the recreational values of the river.

19. In 2004, the Tukituki River was recognised as a Potential Water Body of National Importance for recreation, for whitebaiting and angling, by the Ministry for the Environment.

20. The main recreational activities which take place on the Tukituki River are discussed in more detail below.

Angling

21. The Tukituki River is predominately a rainbow trout fishery with some larger brown trout present in the lower reaches. The average weight of trout is around 1.5 kg however, during the whitebait season larger trout up to 4 kg in size can be found in the lower river. The trout population is self-sustaining.

22. The Tukituki River trout fishery is highly valued, attracting a high number of anglers from within Hawke's Bay each year. In the 1980s it was the most highly fished river in the region. However, in recent years usage has significantly declined, with the results of the national angling survey showing a decline of 50% between the early and late 2000s.

23. Over its 117 km length, the Tukituki River provides a variety of fishing experiences which are easy to access. The river starts off relatively small in it's the upper reaches, slowing gaining momentum as it moves downstream and a number of tributaries join its flow. The middle reaches are the most popular area for angling. The lower Tukituki River become much larger as it meets the sea.

24. During the summer months, slime and algae increases and river flows reduce, occasionally drying up in parts. This makes angling difficult by reducing the fishable areas and fouling fishing lures, which severely impact on angling values.

25. In 1982, the Tukituki River was identified by the Ministry of Agriculture and Fisheries as being a river which is of at least regional importance for angling, and may qualify as a river of national importance for angling subject to more information being gathered.

26. In 1984, a report by the Fisheries Research Division identified the Tukituki River as a 'recreational' fishery which has high use and is of at least regional importance. Specifically, the Tukituki River was identified as having exceptional overall importance for its access, large area of fishable water and being close to home.

27. In 1986, the Government released a finalised list of rivers and lakes with outstanding wild, scenic, recreational or other natural characteristics that should be protected. The Tukituki River was placed in 'Group Two[1]' for its scenic and recreation qualities. The report specifically refers to the Tukituki River's value for fishing.

28. In 2012, the Tukituki River was identified as nationally significant in the Hawke's Bay RiVAS assessments for salmonid angling.

[1] Group One = Excellent rivers or lakes containing an outstanding cultural, fisheries, wild flora, location, recreation, scenic, scientific, tourism, wildlife habitat, value(s). Group One contains the very best examples of these values. Group Two = Contains examples of water bodies whose values better represented by the rivers or lakes in group one. Group Three = those water bodies who may deserve to be in first or second group, but there was inadequate information.

Boating

29. The Tukituki River provides a 77 km stretch of easy jet boating water, which is suitable for beginners and family boating. During high flows the river is boatable from the sea to the Highway 50 Bridge or beyond, under normal flows the river is boatable to the Waipawa Confluence.

30. The Tukituki River is frequently used for canoeing, with the most popular trip from the Hylton Burn Stream down to the Highway 50 Bridge, and occasionally through to Havelock North. During late summer the river flows are too low to canoe from the Hylton Burn Stream confluence. The river is not used for rafting and is considered to be too shallow and of little interest.

31. In 1986, the Tukituki River was placed in 'Group Two' in the Government's list of rivers and lakes deserving protection, for its scenic and recreation qualities, which specifically noted its canoeing values.

32. In 1981, the Recreational River Survey assigned the recreational and scenic values of the Tukituki River an 'intermediate[2]' and 'picturesque[3]' rating, respectively.

33. In 2014, Jet boating New Zealand classified the Tukituki River as an easy 'Class 1' jetboating trip on a shingle, braided river, suitable for family boating.

34. The Tukituki River did not feature in the 2012 RiVAS assessment undertaken in Hawke's Bay for whitewater kayaking.

Ecology values

35. The Tukituki River has high wildlife and native fish values and is identified as a Significant Conservation Area (SCA) in the Regional Coastal Plan. It has a braided river habitat which is a rare habitat type internationally, and is home to high numbers of waders. Part of the river is located within a wildlife refuge which was created to allow a safe haven for waterfowl during the shooting season.

36. The Tukituki River is highly connected to the Ruataniwha Aquifer, which influences both the hydrology and the water quality of the middle and lower reaches of the Tukituki River.

37. During the warm summer months when water flows are low, cyanobacteria mats can build up in parts of the Tukituki River. Excessive periphyton growth creates an unhealthy environment for fish, river bugs and insects and can have detrimental effects on a rivers ecology.

38. The ecological values associated with the Tukituki River are discussed in more detail below.

Fish

39. The Tukituki Catchment contains a high diversity of native fish, with a total of 21 species (18 native) of fish recorded in the catchment between 1964 and 2011. The Tukituki Estuary is recognised as an important spawning ground for the native galaxid species.

40. Of the 18 native species recoded in the catchment, 8 have a declining threat classification and include the longfin eel, īnanga, redfin bully, bluegill bully, lamprey, torrentfish, koaro and dwarf galaxiid.

41. Trout populations in the Tukituki River are self-sustaining with trout spawning occurring in the Tukituki River and in a number of its tributaries.

42. The Tukituki River mouth is identified as a Significant Conservation Area (SCA) in The Hawke's Bay Regional Coastal Environment Plan. The river mouth is identified as being an important inanga spawning site and vital for the passage of native diadromous fish between the sea and freshwater habitats higher in the catchment.

43. In 2012, the River Values Assessment System (RiVAS) was used to assess the significance of rivers in Hawke's Bay for native fish. The RiVAS assessment determined the Tukituki catchment was nationally significant for native fish, concluding the average number of native fish in the Tukituki catchment is 198,740.

44. In 2015, the Department of Conservation advised that the high diversity of native fish in the Tukituki catchment is similar to other catchments draining to the East Coast of the North Island.

[2] Recreational values graded on a five point scale: insignificant, low, intermediate, high, exceptional

[3] Scenic values graded on a six point scale: dull, uninspiring, moderate, picturesque, impressive, exceptional.

45. Note: The information in this section relates to fisheries in the greater Tukituki catchment (i.e. it is not limited to the Tukituki River).

Wildlife

46. The Tukituki River is recognised as an important wildlife habitat due to its high diversity of birds, some of which are endangered, and its large waterfowl population.

47. A total of 51 species of birds have been recorded on the river, including the endangered black billed gull and a number of threatened species such as white heron, royal spoonbill, grey duck, Caspian tern, white fronted tern, South Island oystercatcher and the New Zealand pipit. The long-tailed bat is present in bush alongside the river.

48. Four riverbed bird surveys occurred on the Tukituki River between 1967 and 1986[4]. These surveys confirm the river supports the largest population of waders when compared to all other Hawke's Bay Rivers, with particularly large populations of banded dotterel and pied stilt residing at the river. Black billed gulls were also found to be more common on the Tukituki River than elsewhere in Hawke's Bay.

49. In total, 43 bird species were recorded around the river mouth. Waterfowl were noted as being more common than on the other rivers, particularly on the lower half of the river, and white-faced heron and black-fronted tern were identified as being regular winter visitors.

50. The Tukituki River is thought to hold around 5% of the national population of banded dotterel (around 55% of the regional population) and 3-4% of the national population for pied stilt (around 50% of the regional population). Both birds are noted as having a very large range and are recorded as 'least concern' on the IUCN[5] red list.

51. The Tukituki River mouth is identified as a Significant Conservation Area (SCA) in The Hawke's Bay Regional Coastal Environment Plan, due to its high wildlife values, particularly the large number of black billed gulls, terns and little black shags. Recent observations have found black billed gulls to be the most common on the Tukituki River when compared to other rivers in Hawke's Bay.

52. In 2017, a black-billed gull colony of more than 300 nests was found at the Tukituki River mouth. The black-billed gull is New Zealand's only endemic gull and is referred to as the "most threatened gull in the world". In 2013, its threat status was upgraded from 'Nationally Endangered' to 'Nationally Critical' with its population having declined by 80%.

53. In 1967, a large section of the Tukituki River (located upstream of the Tukituki Bridge) was designed as a wildlife refuge, due to the high waterfowl numbers and in order to provide a safe area for these birds during the duck shooting season. This area is managed by Department of Conservation and is a Closed Game Area.

54. In 1984, the New Zealand Wildlife Service[6] listed the Tukituki River as having high[7] importance for wildlife due to its high numbers of waders and black backed gulls. The river mouth was listed as having medium-high importance, due to the low numbers of waders recorded on this section of river.

55. In 1992, the Department of Conservation designated most of the Tukituki River bed as a Recommended Area for Protection (RAP) as part of its Protected Natural Areas Programme (PNAP) surveys[8], citing "*its valuable riverbed habitat which supports high numbers of waders and wetland birds*".

56. In 2012, Hawke's Bay RiVAS assessments for native birdlife concluded the upper Tukituki River (above SH50) was locally significant, the middle Tukituki River (between SH2 and SH50) was of regional importance, and the lower Tukituki River was nationally significant, for native birdlife.

[4] 1967, 1972, 1984 and 1986

[5] International Union for Conservation of Nature red list of threatened species.

[6] 1984, the Fauna Survey Unit (FSU) of the New Zealand Wildlife Service, Department of Internal Affairs, carried out a survey of wildlife and wildlife habitats (Sites of Special Wildlife Interest – SSWI) of the Hawke's Bay Region as part of a national habitat inventory.

[7] Sites were ranked using criteria and classed as outstanding, high, moderate-high, moderate and potential.

[8] The RAP extends from the confluence of the Makaroro and Waipawa Rivers, and the Tukituki River near the top of Tukituki Road, right down to the river mouth.

Macroinvertebrates

57. Hawke's Bay Regional Council regularly monitors the freshwater ecology of the Tukituki River at the following sites (see Table 2). The macroinvertebrate measures in Table 2 are an indicator of stream health where generally, the higher the Macroinvertebrate Community Index, taxa richness and percent EPT, the better the health of the stream.

58. The monitoring results show at SH50 and Tamumu Bridge the Tukituki River has median MCI scores indicative of "good" water quality with mild pollution. The sites at Black Bridge and Red Bridge have much lower MCI scores which suggest poor water quality, with moderate pollution.

59. Notwithstanding, the Black Bridge monitoring site is known to be influenced by saline water intrusion which may have a significant influence on macroinvertebrate composition. This means the MCI scores at Black Bridge may not be a robust indicator of ecological health at that site.

Table 2: Macroinvertebrate sampling results – Tukituki River (median 2011 - 2016)

Monitoring site	Macroinvertebrate Community Index (MCI)	Classification	Taxonomic richness	Percent EPT[9] richness
Black Bridge (Haumoana)	MCI between 80 and 99	FAIR	16	27.8.1%
Red Bridge (Tukituki Valley)	MCI between 80 and 99	FAIR	15	35.2%
SH50	MCI between 100 and 119	GOOD	14	72.1%
Tamumu Bridge	MCI between 100 and 119	GOOD	13	44.4%

Note: Regional Councils use a classification from Stark & Maxted (2007) for MCI sampling, assigning a rating of either excellent, good, fair or poor for ecological health and/or habitat condition.

Landscape / scenic values

60. The Tukituki River is relatively small in its upper reaches, flowing through native bush and a narrow, scrub lined gorge before forming a braided river system that runs across the Ruataniwha Plains. The Tukituki River gradually increases in size as a number of tributaries join its flow.

61. In 1979, the Tukituki River was given an 'interesting'[10] scenic rating in "64 New Zealand Rivers" which contains an indepth scenic evaluation of sixty four of New Zealand's major Rivers.

62. In 1981, The New Zealand Recreational River Survey assigned the scenic values of the Tukituki River a 'picturesque'[11] rating.

63. In 1986, the Government released a finalised list of rivers and lakes with outstanding wild, scenic, recreational or other natural characteristics that should be protected. The Tukituki River was placed in 'Group Two'[12] for its scenic and recreation qualities.

64. Photographs of the Tukituki River are contained in Attachment 2.

Naturalness/intactness of waterbody

65. The Tukituki River is largely unmodified in its upper reaches, with river control works beginning at Waipukarau and below Havelock North. To assist with flood control long stretches the Tukituki River have been converted from a braided river to a meandering river flow.

[9] EPT stands for Ephemeroptera (mayfly), Plecoptera (stonefly) and Trichoptera (caddisfly). These are macroinvertebrates which are sensitive to water pollution.

[10] Scenic values graded on a five point scale: dull, ordinary, interesting, impressive, exceptional.

[11] Scenic values graded on a six point scale: dull, uninspiring, moderate, picturesque, impressive, exceptional.

[12] Group One = Excellent rivers or lakes containing an outstanding cultural, fisheries, wild flora, location, recreation, scenic, scientific, tourism, wildlife habitat, value(s). Group One contains the very best examples of these values. Group Two = Contains examples of water bodies whose values better represented by the rivers or lakes in group one. Group Three = those water bodies who may deserve to be in first or second group, but there was inadequate information.

66. The Tukituki Estuary has undergone considerable works to control flood waters which has had a significant effect on the ecology of the estuary.

67. In 2012, Hawke's Bay RiVAS assessments for natural character concluded the upper Tukituki River (above SH50) was nationally significant, the middle Tukituki River (between SH50 and Waipukurau) was of regional importance, and the lower Tukituki River was locally significant, for natural character.

Water Quality

68. Hawke's Bay Regional Council regularly monitors the quality of water in the Tukituki River for both recreational and ecosystem purposes.

69. The water quality of the Tukituki River with regard to 'recreation' and 'ecosystem health' is discussed below.

Water quality – recreation

70. Hawke's Bay Regional Council regularly samples the water quality of the Tukituki River for *E.coli* at the following locations (see Table 3). *E.coli* concentrations are measured at these sites to determine whether a site is suitable for full immersion activities such as swimming. An overall bacterial risk rating is assigned based on three years of data.

71. During the summer months these sites are also monitored for toxic algal blooms. In April 2018, the water quality at Black Bridge was unsuitable for swimming due to the presence of a toxic algal bloom which is thought to have washed in from the sea.

Table 3: Recreational water quality – Tukituki River (2016 – 2018)

Monitoring site	Microbiological Indicator (*E. coli*)	Overall bacterial risk rating	Toxic algae rating
Black Bridge (Haumoana)	E. coli level significantly vary, in the last three years lowest reading = 1 cfu/100ml and highest reading = 1,220 cfu/100ml.	LOW Risk - this site is generally suitable for swimming	No recent data - Potentially toxic algal blooms occur at times
Walker Road (Waipawa)	E. coli level significantly vary, in the last three years lowest reading = 1 cfu/100ml and highest reading = 812 cfu/100ml.	MEDIUM risk - caution advised – usually suitable for swimming but younger children and older people may be at increased risk at times.	No recent data - Potentially toxic algal blooms occur at times
SH2 Bridge	E. coli level significantly vary, in the last three years lowest reading = 1 cfu/100ml and highest reading = 870 cfu/100ml.	MEDIUM risk - caution advised – usually suitable for swimming but younger children and older people may be at increased risk at times.	No recent data - Potentially toxic algal blooms occur at times

Water quality – ecosystem health

72. Hawke's Bay Regional Council regularly samples the water quality of the Tukituki River at the following locations (see Table 4). The nitrate and ammonia attribute bands provide an indication of the chronic toxicity risk to aquatic animals.

Table 4: Water quality – Tukituki River (2016)

Monitoring site	Water clarity	Nitrogen	Phosphorus	Microbiological Indicator (*E. coli*)
Black Bridge (Haumoana)	Turbidity = 2.4 NTU; Black disk = 2.1 metres. The black desk test, is in the best 50% of like sites within New Zealand. Turbidity state is in the worst 50% of like sites within New Zealand.	NOF BAND A Total Nitrogen, and Total Oxidised Nitrogen are within the worst 50% of like sites within New Zealand. Total Nitrogen = 0.67 g/m3; Total Oxidised Nitrogen = 0.5 g/m3 (Annual median) and 1.22 g/m3 (95th percentile); Ammoniacal Nitrogen is in the best 25% of like sites in New Zealand Ammoniacal Nitrogen = 0.0102 g/m3 (Annual median), 0.0393 g.m3 (annual maximum)	Dissolved Reactive Phosphorus, and Total Phosphorus are within the best 50% of 'like' sites within New Zealand. Dissolved Reactive Phosphorus = 0.009 g/m3, Total Phosphorus =0.016 g/m3.	NOF Band A E. coli = 32 n/100ml (annual median) In the best 25% of like sites in New Zealand
Red Bridge (Tukituki Valley)	Turbidity = 3.13 NTU; Black disk = 1.9 metres. The black desk test, is in the best 50% of like sites within New Zealand. Turbidity state is in the worst 50% of like sites within New Zealand.	NOF BAND A Total Nitrogen, and Total Oxidised Nitrogen are within the worst 50% of like sites within New Zealand. Total Nitrogen = 0.75 g/m3; Total Oxidised Nitrogen = 0.565 g/m3 (Annual median) and 1.254 g/m3 (95th percentile); Ammoniacal Nitrogen is in the best 25% of like sites in New Zealand Ammoniacal Nitrogen = 0.0093 g/m3 (Annual median), 0.0329 g.m3 (annual maximum)	Dissolved Reactive Phosphorus = 0.011 g/m3. Dissolved Reactive Phosphorus, is within the worst 50% of 'like' sites within New Zealand. Total Phosphorus =0.018 g/m3. Total Phosphorus is within the best 50% of 'like' sites within New Zealand.	NOF Band A E. coli = 30 n/100ml (annual median) In the best 25% of like sites in New Zealand
SH50	Turbidity = 4.29 NTU; Black disk = 1.28 metres. Turbidity state and black disk are in the worst 50% of like sites within New Zealand.	NOF BAND A Total Nitrogen = 0.14 g/m3; Total Oxidised Nitrogen = 0.064 g/m3 (Annual median) and 0.26 g/m3 (95th percentile) Ammoniacal Nitrogen = 0.0028 g/m3 (Annual median), 0.0153 g/m3 (annual maximum) All are in the best 25% of like sites in New Zealand	Dissolved Reactive Phosphorus = 0.0046 g/m3, Total Phosphorus =0.008 g/m3. Both are in the best 25% of like sites in New Zealand	NOF Band A E. coli = 13 n/100ml (annual median) In the best 25% of like sites in New Zealand
Tamumu Bridge	Turbidity = 3.29 NTU; Black disk = 1.8 metres. Turbidity state and black disk are in the worst 50% of like sites within New Zealand.	NOF BAND A and NOF BAND B Total Nitrogen = 0.894 g/m3; Total Oxidised Nitrogen = 0.73 g/m3 (Annual median) and 1.549 g/m3 (95th percentile) Ammoniacal Nitrogen = 0.0098 g/m3 (Annual median), 0.034 g/m3 (annual maximum) All are in the worst 50% of like sites within New Zealand.	Dissolved Reactive Phosphorus = 0.016 g/m3, Total Phosphorus =0.022 g/m3. Both are in the worst 50% of like sites within New Zealand.	NOF Band A E. coli = 26 n/100ml (annual median) In the best 25% of like sites in New Zealand

Note 1: NOF BAND A for E.coli = water suitable for designed use with les 1% risk of infection from contact with water during activities with occasional immersion (such as wading and boating). Band A is suitable for swimming.
Note 2: NOF BAND A for Nitrogen = unlikely to be effects even on sensitive species.

Values Summary

Overarching Value	Sub-value	Description	Outstanding Yes/no	Comments
Cultural	TBC	TBC	TBC	TBC
Recreational	TBC	TBC	TBC	TBC
Ecological	TBC	TBC	TBC	TBC
Landscape	TBC	TBC	TBC	TBC
Natural Character	TBC	TBC	TBC	TBC

Attachment 1

Tukituki River – Cultural Values Report

Key Values
Spiritual values
Wāhi Tapu, wāhi taonga, wai tapu
Mahinga kai, Pā tuna
Pā, Kāinga
Rohe boundary

Table 1: List of documents reviewed

Year	Name	Author
2004	Potential Water Bodies of National Importance	Ministry for the Environment
2006	Areas of Significant Conservation Values: HB Coastal Marine Area (HBRC Report Number 4203 - Draft)	Hawke's Bay Regional Council
2012	River Values Assessment System (RiVAS)	Lindis Consulting
2012	Tukituki River Catchment Cultural Values and Uses	Te Taiwhenua O Tamatea & Te Taiwhenua O Heretaunga for HBRC
2016	Heretaunga Tamatea deed of settlement + documents schedule (specifically statements of association)	Heretaunga Tamatea and the Crown
2018	Cultural Values Table	Hawke's Bay Regional Council

1. Introduction *

Purpose

The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the Tukituki River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

This report presents the summarised findings of the cultural values attributed to the Tukituki River in those documents referred to in Table 1, above.

The report summarises the cultural values associated with the Tukituki River into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Importance

The Tukituki River is a significant waterway for Heretaunga Tamatea, one of six large natural groups negotiating the settlement of Ngāti Kahungunu Treaty of Waitangi claims. It lies at the heart of their spiritual and physical wellbeing. The Tukituki River is a tīpuna (ancestor). It is integral to the web of whakapapa connections shared by the different hapū along its banks. It provides the hapū with a sense of identity and interconnectedness as it runs through their lives.

The Tukituki awa was used extensively for mahinga kai, and for transporting people and goods. It was once a 'river of villages' and a 'highway' connecting whānau to their mahinga kai, to other whānau, and to trade and prosperity. All along the Tukituki River are signs of occupation and sites that record key events in tribal history.

The Tukituki Estuary is also significant with high conservation and cultural values.

The name Tukituki refers to both a paddle rhythm and the beating of water to make a splashing noise to herd fish into backwater or channels.

2. Spiritual Values

A narrative exists on the way in which the Tukituki River came into existence. A large lake was located in what is now the Ruataniwha Plains. Two taniwha lived in this lake. On one occasion a boy fell into the lake and the two taniwha fought over their prey. The resulting destruction on the landscape created breaks in the hills through which the lake drained away. One of the channels was the Tukituki River.

On the lower section of river, there are a number of sites that relate to the actions of the ancient tīpuna, Māhu. On the north bank is a white rock, Papaotihi. It is said the rock was once a man who was fishing in the river, but he was turned to stone by Māhu. A little further on is another rock, Tauhou, where Māhu turned another man to stone. Down river near Te Kauhanga pā is another spot touched by Māhu. Here he put a curse on the paepae and people died.

Kahuranaki maunga, a site upstream of Kaiwaka on the rivers eastern bank, is of special significance to all hapū of Heretaunga Tamatea. It is said that as he lay dying, Te Hapuku (nineteenth century Ngāti Te Whatu-i-apiti leader sometimes known as Te Ika-nui-o-te-moana) asked to be placed at Kaiwaka so that Kahuranaki would be the last thing he saw.

3. Wāhi tapu, wāhi taonga

The lower pā site at the base of the Pukeora Hill was a site of a significant battle and those interred on the site in burial caves make this location a wāhi tapu.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

Several waahi tapu sites are identified in Appendix 50 of the Hastings District Plan:

- W6 – Mahinga kai
- W7 - Rangatira – Special, Island
- W8 – Old Pā Site
- W9 – Pā Site – Kauhanga
- W10 – Mahinga kai
- W11 - Urupā

Figure 1: Registered waahi tapu sites in the Hastings District Plan

4. Mahinga kai

Historically, the Tukituki catchment had an abundance of mahinga kai and natural resources. The river was a significant food source central to the well-being of Heretaunga Tamatea. In particular, the river mouth and estuary was renowned for the abundance of fish species that were taken there, which included kahawai, pātiki, kanae, kataha, kokopu, īnanga and tuna. The estuary area continues to support important traditional fisheries for kahawai, flatfish, whitebait and smelt. Many whānau come annually to do their fishing from the mouth of the Tukituki awa at Haumoana through to an area off Tenants Rd referred to as Te Ahikoura (the place to fire and cook crayfish).

Special mahinga kai areas recognised in the Heretaunga Deed of Settlement include the following:

Te Aute Conservation Area

The Te Aute Conservation Area is riverbed land that lies along the western bank of the Tukituki River. Key tīpuna for this area are Tapuhara and his wife Te Whangaoterangi as well as Te Manawaakawa. Hapū of Ngāi Te Whatuiāpiti also have ancestral links to this area.

The conservation area includes Papanui Stream which was formerly the outlet that linked Te Roto-a-Tara wetlands area with the Tukituki River. This was a rich source for tuna and the surrounding area was known for its bush food resources. The bush standing in the vicinity of the Te Aute Conservation Area was known as Purapurahikitia.

Inglis Bush Scenic Reserve

Inglis Bush Scenic Reserve is located along the southern bank of the Tukituki River as it flows out over the Ruataniwha Plains. The reserve is a remnant of the forest that covered the foothills of the Ruahine Range and spread onto the western parts of the Ruataniwha Plains.

These foothills were used as a travel corridor by Ngāti Mārau, Ngāti Te Rangitotohu, Ngāti Pouwharekura, Ngāti Kūhā, Ngāti Honomōkai, Ngāi Te Upokoiri and Ngāi Te Ao, who travelled regularly from north to south and vice versa. Pā and mahinga kai such as pua tāhere, wai tāhere, ara kiore were located here. The hapū also gathered food such as hīnau, miro and other fruit and berries. The bush area was a pua tāhere for the hapū of Ngāi Tūrāhui and Ngāti Pouwharekura.

5. Pā, Kāinga, ara

The river was traditionally the highway that connected whanau to other whānau, to their gardens, to trade links, to their pā sites, to their waahi tapu and to their waahi tupuna. Much of the Tukituki River was navigable for canoes in the winter time and was the main transport route through Heretaunga for much of the nineteenth century.

There is evidence of a rich Māori heritage for at least 7 – 8 centuries of occupation, one of the earliest periods of settlement in Māori history. There are numerous pā located alongside the Tukituki River and a number important sites that record key events in tribal history.

Three pā sites, Waipukureku, Matahiwi and Te Kauhanga are situated near the Tukituki River Mouth. Te Kauhanga which was occupied first by Taraia I and then Te Whatuiapiti.

Whakamarino is also near the river mouth where a battle took place at which another iwi was defeated by Tamaiawhitia. The kāinga of Haumoana is also located here.

Further up the river there is a large cliff, Pariwaiehu. Here Te Waka's pā was located, later taken by Hawea.

To the east of Havelock North, the pā Te Korokoro sits on a western bank. From here the river runs below Parikārangaranga, Te Mata-o-Rongokako, and the smaller peak of Te Hau. Below both these peaks there are pits, terraces and other indications that people once lived here. From the river a track led to the summit of the range.

Some distance upstream an old pā called Ngawhakatātara was located on an island while opposite was a kāinga and pā named Kurīwaharoa. Other more recently built pā on the Tukituki include Pātangata and Tāmumu.

Hapū used whānau land and traditional 'possies' to have seasonal camps on the river. These nohoanga were a tradition.

Special areas recognised in the Heretaunga Tamatea Deed of Settlement include the following:

Kahika Conservation Area

The Kahika Conservation Area is primarily located in the riverbed of the Tukituki River. The tīpuna and hapū associated with the Kahika Conservation Area were Te Rehunga and his Ngāti Mihiroa descendants. Other tīpuna associated with this area included Ketekai and Te Whareupoko and their descendants.

Pukeora Forest

The Pukeora Forest is located a few kilometres to the immediate northwest of Waipukurau township and is situated over a former pā site. An upper pā site named Kaimanawa was located on the ridge of Pukeora Hill (where subsequently a tuberculosis sanatorium was established). The lower pā site was situated at the base of the Pukeora Hill where evidence of terraces has been recorded.

The hapū of Tamatea who are associated with Pukeora Forest and Kaimanawa are Ngāi Toroiwaho, Ngāi Tahu ki Takapau, Ngāi Te Kīkiri o te Rangi and Ngāti Mārau. The maunga Wairākai and significant Ngāi Toroiwaho pā, Moana-i-rokia, are situated to the immediate south of Pukeora Forest.

6. Conflict

The Tukituki River was used when Pareihe, Tiakitai and Te Wera Hauraki rowed their waka taua upstream and then dragged them across to Roto a Tara to attack and defeat Ngāti Raukawa and Ngāti Tūwharetoa in 1824.

The lower pā site at the base of the Pukeora Hill was a site of a significant battle and those interred on the site in burial caves make this location a wāhi tapu.

Whakamarino is near the river mouth where a battle took place at which another iwi was defeated by Tamaiawhitia.

7. Rohe boundary

After the arrival of the Ngāti Kahungunu tīpuna to Heretaunga, the Tukituki River was established as the first boundary between Taraia, who took the land to the west of this river, and Te Aomatarahi who took the land to east and south of the river.

8. Archaeology

Figure 2: Archaeological Sites on the Tukituki – near the mouth

Figure 3: Archaeological Sites on the Tukituki – Tukituki to Kahuranaki

Figure 4: Archaeological Sites on the Tukituki – Kahuranaki to junction with Waipawa

Figure 5: Archaeological Sites on the Tukituki – around the junction with Waipawa River

9. Statutory Acknowledgement Area of Interest

Figure 6: Heretaunga Tamatea Area of Interest

10. Resource Management Plans

The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to the Tukituki River. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Iwi and Hapū Resource Management Plans
Kahungunu ki Uta, Kahungunu ki Tai: Marine & Freshwater Fisheries Strategic Plan
Mana Ake - An Expression of Kaitiakitanga, Te Taiwhenua o Heretaunga

Regional Resource Management Plan
Section 5.9 (Tukituki River Catchment) – various objectives, policies, limits and targets apply to water quantity and water quality
Catchments Sensitive to Animal Effluent Discharges (Schedule 6b)
Minimum Flow Rivers (Schedule 7)
Rivers Considered for Riparian Protection (Schedule 8)
Schedule 14c – Tukituki River Sub-catchments
Schedule 15 – Tukituki Plan Change 6 – Water Management Zones

Cont'd overpage…

Regional Coastal Environment Plan

Specific water quality standards apply to Tukituki River downstream of Tamumu bridge

- 100 Faecal Coliforms (cfu/100ml)
- 10 Suspended Solids (mg/l)

Schedule R - Stock Management Areas - Tukituki River mouth

Hastings District Plan

Appendix 50 - Waahi Tapu Sites

Central Hawke's Bay District Plan

Appendix C – Schedule of sites of cultural significance to tangata whenua – contains archaeological sites

Appendix H – Schedule of identified community facilities includes several marae – for information purposes only (no rules).

Attachment 2: Photographs - Tukituki River

Lower Tukituki River

Tukituki River (Walker Road)

Tukituki River

Tūtaekurī River

Key Cultural Values
Wāhi Tapu, wāhi taonga
Mahinga kai, Pā tuna
Pā, Kāinga
Rohe boundary

Table 1: List of documents reviewed

Year	Name	Author
1992	Te Whanganui-ā-Orotu, Traditional Use and Environmental Change, customary usage report, Wai 55	P. Parsons
1995	Te Whanganui-ā-Orotu report, Wai 55	Waitangi Tribunal Report
1996	Waiohiki Land Claim, Wai 168	R.C Pewhairangi
2004	The Mohaka ki Ahuriri Report, Wai 201	Waitangi Tribunal Report
2012	Submission from Te Taiwhenua o Heretaunga on Proposed Plan Change 5 to the RPS	Te Taiwhenua o Heretaunga
2013	Maungaharuru-Tangitū Hapū Deed of Settlement + Documents Schedule	Maungaharuru-Tangitū Hapū and the Crown
2014	Tūtaekurī Awa: Management and Enhancement Plan	Ngā Hapū o Tūtaekurī
2015	Tutaekuri River Ecological Management and Enhancement Plan	Hawke's Bay Regional Council
2016	Mana Ahuriri Deed of Settlement + Documents Schedule	Ahuriri Hapū and the Crown
2016	Heretaunga Tamatea Deed of Settlement documents	Heretaunga Tamatea and the Crown
2016	Forifications of New Zealand Wars	Department of Conservation
2018	Tūtaekurī Awa: Values, Objectives and Management Report	Ngā Hapū o Tūtaekurī
2018	Cultural Values Table	Hawke's Bay Regional Council

Discussion

Purpose of report

1. The purpose of this report is to assist the Regional Planning Committee members to determine whether any of the cultural values associated with the Tūtaekurī River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the cultural values attributed to the Tūtaekurī River in those documents referred to in Table 1, above. For clarification, the Tūtaekurī River has been nominated as potentially outstanding for the cultural value set only. In accordance with decisions made by the RPC in May 2018, this report does not discuss the recreation, landscape and ecology values (or other values) associated with the Tūtaekurī River.
3. The report summarises the cultural values into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.
4. Ultimately, the Regional Planning Committee will need to decide what an appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Overview

5. Three Treaty settlement entities have customary linkages to the Tūtaekurī River - Ahuriri Hapū, Heretaunga Tamatea and Maungaharuru –Tangitū.
6. The Tūtaekurī River takes its name from an incident that occurred when Hikawera came to the aid of a starving party of travellers. He ordered 70 dogs be prepared to feed the hungry wanderers. The place where this occurred became known as Te Umukuri. The offal was thrown into the river hence the name Tūtaekurī.
7. Up until 1931, the lower part of the Tūtaekurī River flowed north into Te Whanganui a Orotū (the Ahuriri Estuary). In 1931, the Napier earthquake drastically raised the land underneath Te Whanganui a Orotū, forcing the Tūtaekurī River to change its course. Between 1934 and 1936, the Tūtaekurī River was diverted further to connect to the Ngaruroro River flowing out to sea through the Waitangi Estuary.

Location

8. The Tūtaekurī River rises in the Kaweka Ranges, around 50 kilometres northeast of Taihape. It is approximately 100 kilometres long and flows over there Heretaunga Plains where it now joins the Ngaruroro River and flows out to sea through the Waitangi Estuary.
9. The Mangaone River is a major tributary of the Tūtaekurī River. The Mangaone River begins to the southeast of the Puketitiri Bush near Te Pōhue, flowing directly south until it now joins the Tūtaekurī River.
10. The extent of the Tūtaekurī River and its catchment can be seen in Figures 1 and 2, below.

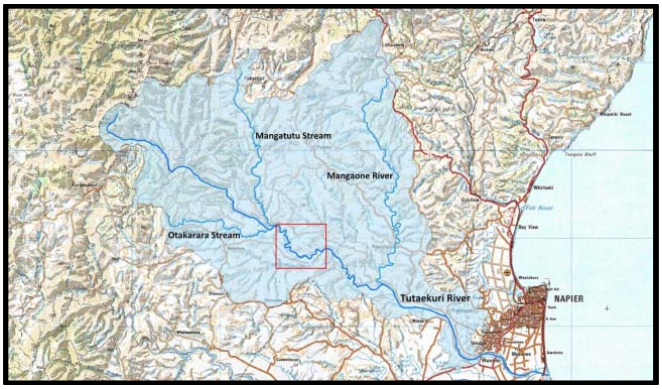

Figure 1: Extent of the Tūtaekurī River

Figure 2: Tūtaekurī catchment (in dark green)

*Cultural values **

Importance

11. The Tūtaekurī River is an important waterway to many Ngāti Kahungunu marae and hapu who have extensive interests located along the river. It was historically connected with Te Whanganui a Orotū. Both were integral to the prosperity and survival of the tangata whenua who dwelled, and still dwell, in the vicinity.
12. Three Treaty settlement entities have customary linkages to the Tūtaekurī River - Ahuriri Hapū, Ngāti Pāhauwera and Maungaharuru –Tangitū.
13. Ahuriri Hapū have a strong cultural association with the Tūtaekurī River and its significant tributary, the Mangaone River (Deed of Settlement). The river, its floodplain and associated swamps were resources of high significance and many kāinga were established along its course.
14. The lower reach of the Tūtaekurī River (both its present and original course) was traditionally utilised by Ngati Pārau. The present-day marae associated with Ngati Pārau is Waiohiki Marae.
15. The lower and middle stretches of the river was traditionally utilised by Ngati Hinepare. Ngati Hinepare is associated with Moteo Marae, Timikara Marae (both in the Moteo area), and Wharerangi Marae, located west of Poraiti and in the Ahuriri catchment.
16. Heretaunga Tamatea have a cultural association with the Tūtaekurī River (Deed of Settlement). The River forms part of the rohe boundary and provided an excellent transport route from Heretaunga into Mokai Patea and beyond.
17. Maungaharuru -Tangitū have a cultural association with the northern tributaries of the Tūtaekurī River. Other iwi, such as Ngāti Pāhauwera, also travelled to this river to share food and trade.

Tūtaekurī Awa Management and Enhancement Plan & Tūtaekurī Awa Values, Objectives and Management

18. In a contemporary context, there has been a focus on improving the health of the Tūtaekurī River. Ngā Hapū o Tūtaekurī have developed the Tūtaekurī Awa Management and Enhancement Plan, which is supported by the Tūtaekurī Awa Values, Objectives and Management Report.
19. These documents describe the spiritual connections between Ngā Hapū o Tūtaekurī and the Tūtaekurī River, and outlines management objectives based around those connections. The purpose of the plan is to identify and describe the views and intentions of the Hapū and their aspirations for the Tūtaekurī River in the future. These are stated as:
    - Enhancement of the mauri of the Tūtaekurī awa
    - Enhancement of rongoā and native species proliferation
    - Enhancement of mahinga kai species proliferation
    - Realisation of kaitiakitanga for Ngā Hapū o Tūtaekurī
20. The plan outlines the importance of the awa as follows:

    Tūtaekurī awa is a taonga that represents the history and emotional attachment of Ngā Hapū o Tūtaekurī, a place central to the identity of our people, where we can go to be revitalised, a place that represents the hopes and aspirations of tangata whenua, the life-giving waters from which we drink. Since the 15th Century our tīpuna have lived as one with Tūtaekurī awa. It is well-known that the tangata whenua of the Tūtaekurī awa not only treasured but protected this valuable resource.
21. A Tutaekuri River Ecological Management and Enhancement Plan has been developed by the Hawke's Bay Regional Council with the involvement of local hapū. The objective of this plan is to identify the ecological, cultural, recreational and drainage values associated with the part of the river that is managed for flood control purposes. The plan specifies management standards to be applied for future flood control activities.

TANK Group

22. The TANK Group has been working since 2012 on land and water management issues for the Tutaekurī, Ahuriri, Ngaruroro and Karamū catchments. Its purpose is to recommend limits and measures for a workable plan change. TANK's collaborative membership includes more than 30 groups, representing Tāngata Whenua, primary sector, councils and environmentalists.

* The HBRC and authors of this report are aware there are numerous areas, including water bodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this region is not intended to imply any exclusive rights over particular water bodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that water body. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from exiting published documents.

23. The TANK group has been progressing a cultural values framework, identifying values and attributes to characterise water quality.

Spiritual Values

24. The physical connections between the Tūtaekurī River and the hapū who hold mana whenua over that resource have altered, but pepeha, whakatauki, oral traditions and waahi taonga preserve their spiritual associations and relationships with ancestral lands, water, sites, waahi tapu and associated taonga.

Wāhi tapu, wāhi taonga, wai tapu

25. Otatara Pā is wāhi tapu as an ancient pā and as an urupā. It held a prominent position over the river and is 'the guardian of all people who live in its shadow'.

26. A quick-sand swamp in Waiohiki is a burial ground; it is tapu and a very special place of major significance.

27. A site at Te Whare O Maraenui, located on the eastern bank of the Tūtaekurī River, contains an urupā of those who died during the battle at Te Pakake Pā.

Mahinga kai

28. The Tūtaekurī River once provided much of the food supply for the local hapū. Eeling was a popular activity along the waterway. Further downstream, nets would be set for inanga and other whitebait species.

29. Otatara Pā was a major intersection between Heretaunga & Ahuriri and it permitted access to eel weirs, fern root groves and kumara plantations in the hinterland. It also allowed access to Te Whanganui a Orotū, well known for its abundance of food and kaimoana. The river mouth area provided a rich source of shellfish varieties including tuangi, pipi, pupu and kuku. Whoever occupied this pā drew resources from the nearby river and wetlands, including inanga, ngaore, and kakahi and food such as koareare and pungapunga from raupo plants.

30. From the Waiohiki Land Claim (Wai 168):

    The River was a significant source of mahinga kai, children swam and played in the river, and large quantities of eel and whitebait was caught. Game was hunted along its banks, water was drawn from it to irrigate gardens, firewood was cut on its banks for hangi, cooking and heating. The Tūtaekurī provided the sustenance and economic base for Ngāti Parau enabling it to flourish and become the envy of other hapu in the rohe. Evidence of food storage sites can still be found along both sides of the river.

31. The Kaweka Forest around the upper reaches of the river was a good food source and the foothills were at times burned.

32. A quick-sand swamp in Waiohiki provided black pigment for dying piupiu, puha and watercress.

Pā, Kāinga, ara

33. Possibly, the most significant pā located on the Tūtaekurī River was Otatara Pā. This was a fortified pā which held a prominent position over the river. It was the gate keeper to the inland waterways of both Ahuriri & Heretaunga. It was elaborately fortified and constructed by Turauwha at some point before the sixteenth century. It's surrounds are taonga of immense cultural, historical, and spiritual value.

34. It was the boundary between Ahuriri & Heretaunga and was an important strategic location in the network of waterways that flowed through this area. In traditional times whoever inhabited Otatara also controlled and occupied the Ahuriri & Heretaunga Plains.

35. There was also a string of other riverside pā built along the lower reaches of the Tūtaekurī River, including Tahunamoa, Takutaioterangi and Oueroa.

36. The earthworks of at least six pa sites bear silent testimony to the occupation of Ngati Mahu at the head of the Dartmoor valley. The pa sites are located on the Tūtaekurī River both upstream and downstream of the junction with the Mangaone River and on the Mangaone River itself. Pakikokiko is a kainga traditionally occupied by Ngati Mahu. Pakikokiko is located on the south side of the river opposite the Apley Road turnoff.

37. Puketapu is the isolated hill pa where the Turirau Swamp empties into the Tutaekuri River. It is located at the first bend in Springfield Road. Te Mingi, the principal pa of Ngai Tamawahine, is located on the south side of the Tutaekuri River opposite Te Puketapu pa.

38. The remnants of Pukekautuku pa, where Ngati Ruapirau fled after the Pou a Kanewa fight, are located on the south side of the Tūtaekurī River above the Sacred Hill winery. This elevated wilderness became the home of the survivors of Ngati Ruapirau who neighboured Ngati Mahu.

39. Te Mingi, the principal pa of Ngai Tamawahine, is located on the south side of the Tūtaekurī River opposite Te Puketapu pa.

40. In the northern part of the catchment, Ngāti Tū's pā include Pukenui (located at the head of Te Ngarue Stream), Te Pōhue, and Motu-o- Rūrū (located at the junction of the Mangaone River and the Waikinakitangata Stream).

41. In pre-European times there were Māori settlements on the eastern Kaweka foothills at the head of the Tūtaekurī River. The river provided an excellent transport route.

Conflict

42. On 12 October 1866, a Pai Marire taua (war party), mostly Ngāti Hineuru, was attacked by local Pākehā forces and Ngāti Kahungunu at Omarunui —a kāinga made up of several palisaded enclosures on the right bank of the Tūtaekurī River above Taradale.

Rohe Boundary

43. Otatara Pā was the boundary between Ahuriri & Heretaunga and in traditional times whoever inhabited Otatara also controlled and occupied the surrounding plains.

44. The Mangaone River was significant as a boundary between the interests of several of the Ahuriri Hapū.

45. The Tūtaekurī River also forms part of the rohe boundary for Heretaunga Tamatea and provided an excellent transport route from Heretaunga into Mokai Patea and beyond.

Archaeology

46. The Tūtaekurī River has a large number of registered archaeological sites along it's banks and in the adjacent hills. The images below do not show the many pits, terraces and platforms that are recorded.

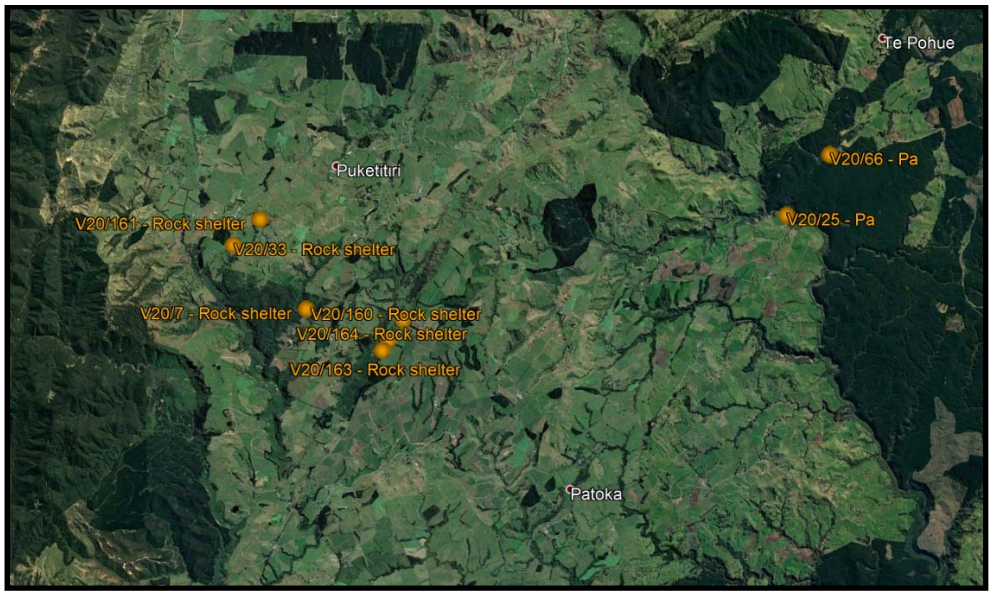

Figure 3: Archaeological Sites in in the upper Tūtaekurī River catchment

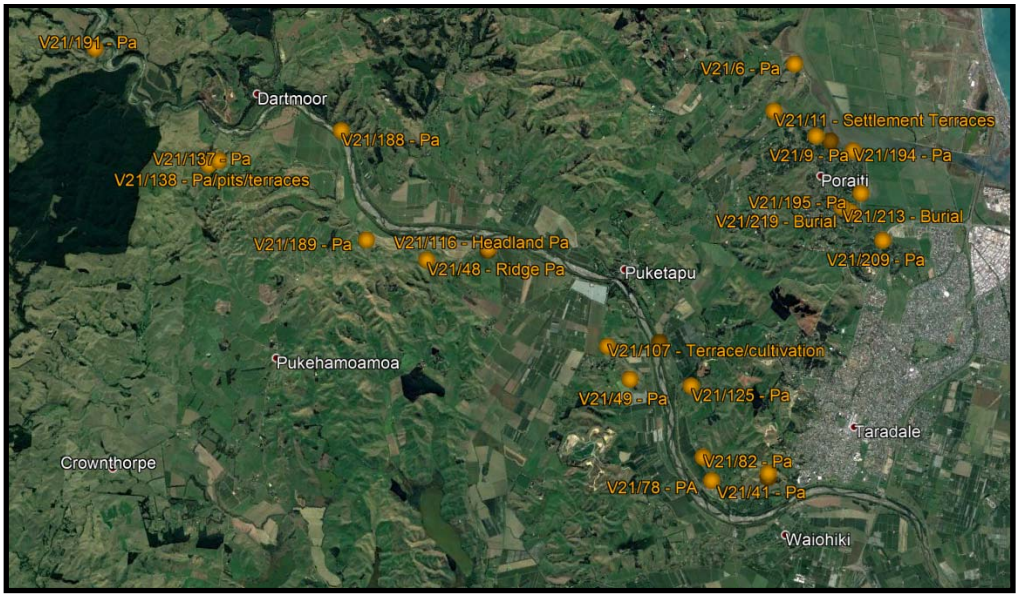

Figure 4: Archaeological Sites in the lower Tūtaekurī River catchment

Statutory Acknowledgement Area of Interest

47. Figures 5, 6 and 7 detail the Ahuriri Hapū, Heretaunga Tamatea and Maungaharuru-Tangitu Areas of Interest.

Figure 5: Ahuriri Hapū Area of Interest

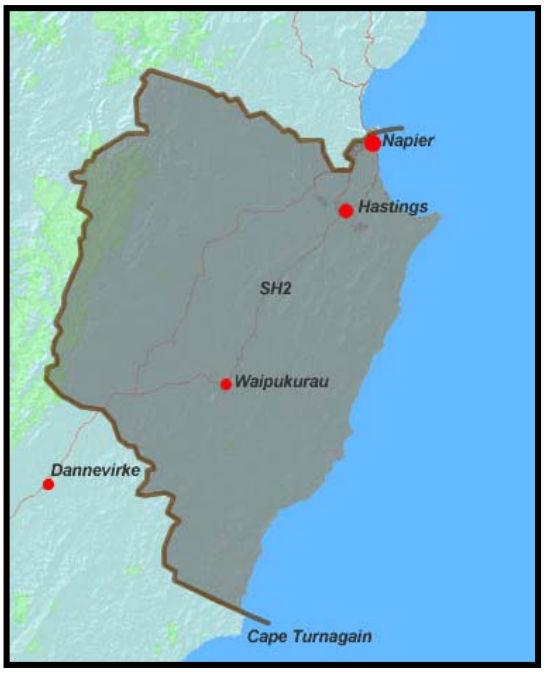

Figure 6: Heretaunga Tamatea Area of Interest

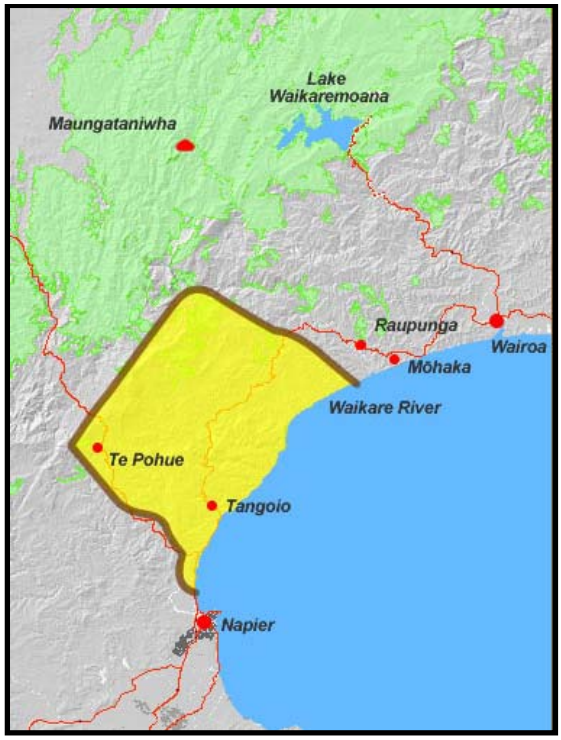

Figure 7: Maungaharuru-Tangitu Area of Interest

Resource Management Plans

48. The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to the Tūtaekurī River. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Iwi and Hapū Resource Management Plans
Kahungunu ki Uta, Kahungunu ki Tai: Marine & Freshwater Fisheries Strategic Plan
Tūtaekurī Awa Management and Enhancement Plan
Mana Ake - An Expression of Kaitiakitanga, Te Taiwhenua o Heretaunga

Regional Resource Management Plan
The following water quality standards apply upstream of Redclyffe Bridge: • 50 Faecal Coliforms (cfu/100ml) • 10 Suspended Solids (mg/l) The following water quality standards apply between Redclyffe Bridge and SH50: • 100 Faecal Coliforms (cfu/100ml) • 25 Suspended Solids (mg/l) The following water quality standards apply downstream of the Expressway Bridge: • 150 Faecal Coliforms (cfu/100ml) • 25 Suspended Solids (mg/l) Minimum Flow and Allocatable Volumes for Specified Rivers • 2,000L/s at Puketapu • 1,200L/s at Goods Bridge Known Productive Aquifer Systems below lower reaches (Schedule 4) Minimum Flow Rivers (Schedule 7) Rivers Considered for Riparian Protection (Schedule 8)

Regional Coastal Environment Plan
Specific water quality standards apply to Tutaekuri River downstream of the Expressway Bridge • 150 Faecal Coliforms (cfu/100ml) • 25 Suspended Solids (mg/l)
Waitangi Estuary is within Significant Conservation Area 11
Known Productive Aquifer Systems below lower reaches (Schedule O)
Stock Management Areas – Waitangi Estuary (Schedule R)
Estuary is within the Coastal Environment

Proposed Hastings District Plan
Rural Character Landscapes – Tutaekuri Valley (RCL3) – Appendix 45
Waahi Tapu sites – Appendix 50
Recommended Areas for Protection – Waitangi Estuary (RAP 17) – Appendix 56

Napier District Plan
Open Spaces Environments River Conservation Zone – Chapter 47
Archaeological Sites – Appendix 13B
Areas of Significance to Maori – M24, M25 and M26 – Napier City Council GIS

Waipawa River

Key Values
Cultural
Recreation (angling, boating)
Ecology (wildlife)

Table 1: List of documents reviewed

Year	Name	Author
1979	64 New Zealand Rivers	Egarr, Egarr & Mackay
1988	Wildlife and Wildlife Habitat of Hawke's Bay Rivers	G.R. Parrish
1981	New Zealand Recreational River Survey	G & J Egarr
1984	The Relative Value of Hawke's Bay Rivers to New Zealand Anglers	Fisheries Research Division - N.Z. Ministry of Agriculture and Fisheries
2004	Potential Water Bodies of National Importance	Ministry for the Environment
2010	Recreational Use of Hawke's Bay Rivers – Results of the Recreational Usage Survey 2010	Hawke's Bay Regional Council
2011	Tukituki Catchment Terrestrial Ecology Characterisation	MWH Global
2012	River Values Assessment System (RiVAS)	Lindis Consulting
2012	Tukituki River Catchment Cultural Values and Uses	Te Taiwhenua O Tamatea & Te Taiwhenua O Heretaunga
2014	Jet Boating NZ – Rivers information	Jet Boating New Zealand
2016	Heretaunga Tamatea deed of settlement + documents schedule	Heretaunga Tamatea and the Crown
2016	Tukituki River Catchment – State and Trends of River Water Quality and Ecology 2004 - 2013	Hawke's Bay Regional Council
2018	Waipawa River Trout and Fly Fishing	NZ fishing website
2018	Cultural Values Table	Hawke's Bay Regional Council
2018	Land Air Water Aotearoa (LAWA)	Hawke's Bay Regional Council

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the values of the Waipawa River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the values attributed to the Waipawa River in those documents referred to in Table 1, above. In accordance with decisions made by the RPC in June 2017, economic and consumptive use values have not been discussed in detail in this report.

Overview

3. The Waipawa River rises in the Ruahine Ranges on the slopes of Te Atua Mahuru flowing southeast until it empties into the Tukituki River, southeast of the Waipawa township. The river is a vast gravel braided river system which supplies much of the water for surrounding rural needs. The river is highly connected to the Ruataniwha aquifer.
4. The Waipawa River starts its journey as a very small steep stream at the bottom of the Ruahine Ranges, becoming a wide braided river as it crosses the Ruataniwha Plains. The river's flow substantially increases after it collects water from the Makaroro and Mangaonuku Rivers to become one of the two largest rivers to cross the Ruataniwha Plains. The river is flanked in parts by stop banks to contain floodwaters.
5. In summer, potentially toxic cyanobacteria mats can grow on the Waipawa River becoming a health risk for people and animals.

Location

6. The Waipawa River is located in Central Hawke's Bay and is a major tributary of the Tukituki River. The location and extent of the Waipawa River can be seen in Figures 1 and 2, below.

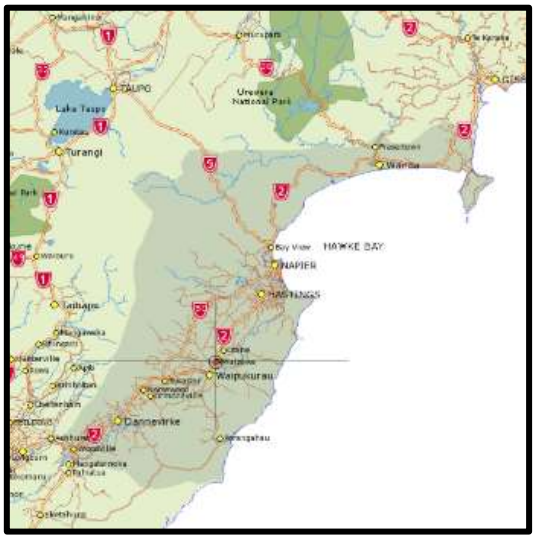

Figure 1: Location of Waipawa River extent

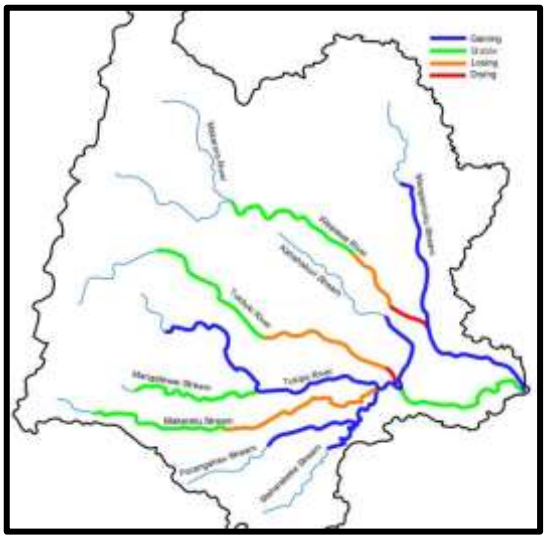

Figure 2: Rivers and Streams - Ruataniwha Plains

*Cultural values **

7. The Waipawa River is a significant waterway for Heretaunga Tamatea. It lies at the heart of their spiritual and physical wellbeing. The river is significant for its resources and the inland access it provides, particularly known for its tuna, pātiki, fresh water koura, water cress and īnanga. In early times, a trading post was set up on the river, with boats travelling up and down from the Tukituki River mouth.
8. A narrative exists on the way in which the Waipawa River came into existence. A large lake was located in what is now the Ruataniwha Plains, which was home to two taniwha. On one occasion a boy fell into the lake and the two taniwha fought over their prey. The resulting destruction on the landscape created breaks in the

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

hills through which the lake drained away. One of the channels through which the lake drained was the Waipawa River.

9. A number of archaeological sites indicating the presence of pā and kāinga have been recorded along Pourerere Road, and near the Waipawa township. Other pā have been recorded upriver which show the strategic significance of the Waipawa River. Near the headwaters was Motu-o-Puku pā which belonged to the descendants of Te Rangitekahutia and the descendants of Te Upokoiri.

10. Attachment 1 contains a more detailed explanation of the cultural values associated with the Waipawa River.

Recreation values

11. The main recreational activities which take place on the Waipawa River are swimming, angling and boating with bird watching occurring to a lesser degree. During summer, cyanobacteria can grow, and parts of the river can dry up, which severely impacts on the recreational values of the river.

12. The recreational activities which take place on the Waipawa River are discussed in more detail below.

Angling

13. Both rainbow and brown trout are present in the Waipawa River, which on average weigh around 1.5 kg. The NZ fishing website describes the Waipawa River as a river which fishes well throughout the year due to its water remaining much cooler than other rivers in this area.

14. In 1984, a report by the Fisheries Research Division identified the Waipawa River as a 'recreational' fisheries of local importance, notable for its high catch rate. The report states that while the river is not heavily fished, it is thought to be of exceptional value by the anglers who do fish them.

15. In 2012, parts of the Waipawa River were identified as nationally significant in the Hawke's Bay RiVAS assessments for salmonid angling.

Boating

16. The Waipawa River provides a 30 km stretch of easy jet boating water which is suitable for beginners and family boating. During high flows the river is boatable up to the Makaroro confluence.

17. The Waipawa River is canoeable from around 3 km above the Makaroro confluence. The water is described in the Recreational River Survey as having easy Grade 1 canoeing water, with the most popular trip being from the Makaroro confluence down to the State Highway 50 Bridge. The Waipawa River is considered to be too shallow and slow moving for rafts.

18. In 1981, The Recreational River Survey assigned the recreational and scenic values of the Waipawa River an 'intermediate[1]' and 'picturesque[2]' rating, respectively.

19. In 2014, Jet boating New Zealand classified the Waipawa River as an easy 'Class 1' jetboating trip on a shingle, braided river, suitable for family boating.

20. The Waipawa River did not feature in the 2012 RiVAS assessment undertaken in Hawke's Bay for whitewater kayaking.

Ecology values

21. The Waipawa River has a braided river habitat type which is a rare habitat type internationally that generally has high ecological values.

22. During warm summer months when water flows are low, cyanobacteria mats can build up in parts of the Waipawa River which can have a detrimental effect on a rivers ecology.

23. In 2004, the Waipawa River was identified as a Potential Water Body of National Importance for aquatic biodiversity values, by the Ministry for the Environment.

[1] Recreational values graded on a five point scale: insignificant, low, intermediate, high, exceptional

[2] Scenic values graded on a six point scale: dull, uninspiring, moderate, picturesque, impressive, exceptional.

Fisheries

24. The Waipawa River did not specifically feature in the 2012 RiVAS assessment undertaken in Hawke's Bay for native fish. The river was instead considered part of the Greater Tukituki River catchment, which determined the Tukituki catchment was nationally significant for native fish. Notwithstanding, due to its inland location, the Waipawa River is likely to have significantly less native fish diversity than the Tukituki River.

25. The river is highly valued for angling which means the river contains important trout fisheries which support this recreational activity. The trout populations in the catchment are self-sustaining.

Wildlife

26. The Waipawa River is recognised as supporting a high number of wetland birds. In 1984 and again in 1988, over a 140 km of The Tukituki and Waipawa riverbeds were surveyed for wildlife. During these surveys, the Tukituki and Waipawa River's held the greatest numbers of banded dotterel in the region.

27. The counts of birds were recorded on the Waipawa River during the 1984 and 1988 surveys and are detailed in Table 2, below:

Table 2 Wildlife Survey – Waipawa River (1984 and 1988)

Bird name	1984	1988
banded dotterel	321	397
black-fronted dotterel	60	61
pied stilt	170	241
paradise shelduck	16	18

28. In 1992, the Department of Conservation designated the Waipawa River bed from the Makaroro confluence a Recommended Area for Protection (RAP) as part of its Protected Natural Areas Programme (PNAP) surveys[3], due to "*its valuable riverbed habitat supporting high numbers of waders and wetland birds*".

29. In 2012, the Waipawa River was identified as regionally significant Hawke's Bay RiVAS assessments for native birdlife.

Macroinvertebrates

30. Hawke's Bay Regional Council regularly monitors the freshwater ecology of the Waipawa River at State Highway 50. The macroinvertebrate measures in Table 3 are an indicator of stream health where generally, the higher the Macroinvertebrate Community Index, taxa richness and percent EPT, the better the health of the stream.

31. The monitoring results show the Waipawa River at State Highway 50 has median MCI score indicative of "good" water quality with mild pollution.

Table 3: Macroinvertebrate sampling results – Waipawa River (median 2011 - 2016)

Monitoring site	Macroinvertebrate Community Index (MCI)	Classification	Taxonomic richness	Percent EPT[4] richness
Waipawa River (SH50)	MCI between 100 and 119	GOOD	15	57.1.1%

Note: Regional Councils use a classification from Stark & Maxted (2007) for MCI sampling, assigning a rating of either excellent, good, fair or poor for ecological health and/or habitat condition.

Landscape / scenic values

32. The Waipawa River begins its journey as a very small steep stream at the bottom of the Ruahine Ranges. It passes through the Ruahine Forest Park where on reaching the Ruataniwha Plains the river flows over a wide

[3] The full RAP area extends from the confluence of the Makaroro and Waipawa Rivers, and the Tukituki River near the top of Tukituki Road, right down to the river mouth.

[4] EPT stands for Ephemeroptera (mayfly), Plecoptera (stonefly) and Trichoptera (caddisfly), and are macroinvertebrates which are sensitive to water pollution.

shingle river bed, boarded by scrub covered banks. It increases in flow after it collects water from the Makaroro and Mangaonuku Rivers, becoming a large braided river system as it flows across the Ruataniwha Plains.

33. The catchment headwaters have predominantly native vegetation, dominated by native forest, with native shrubland and tussock associations above the tree line. The majority of the catchment is largely deforested, with the exception of some areas of exotic forestry in the upper parts of the catchment.

34. In 1979, the Waipawa River was given an 'interesting[5]' scenic rating in "64 New Zealand Rivers" which contains an indepth scenic evaluation of sixty four of New Zealand's major rivers.

35. In 1981, The New Zealand Recreational River Survey assigned the scenic values of the Waipawa River a 'picturesque[6]' rating.

Naturalness/intactness of waterbody

36. Long lengths of the Waipawa River have been converted from a braided to a meandering river course by river control works. This has caused shingle aggradation in some areas resulting in the riverbed being higher than the surrounding landscape in some parts.

37. In 2012, the Waipawa River was identified as regionally significant in the Hawke's Bay RiVAS assessments for natural character. The RiVAS assessment did not discuss the different sections of the river.

Water Quality

38. Hawke's Bay Regional Council regularly monitors the water quality of the Waipawa River at State Highway 50. No sampling occurs in the upper reaches. The 2016 results are detailed in Table 4 below.

Table 4: Water quality – Waipawa River (2016)

Monitoring site	Water clarity	Nitrogen	Phosphorus	Microbiological Indicator (*E. coli*)
Waipawa River (SH50)	Turbidity = 5.61 NTU; Black disk =0.83 metres. Both in the worst 50% of like sites withinNew Zealand.	NOF BAND A Total Nitrogen = 0.1375 g/m3; Total Oxidised Nitrogen = 0.073 g/m3 (Annual median) and 0.2885 g/m3 (95th percentile); Ammoniacal Nitrogen = 0.0034 g/m3 (Annual median), 0.0131 g.m3 (annual maximum. All are within the best 25% of sites within New Zealand.	Dissolved Reactive Phosphorus = 0.005 g/m3, Total Phosphorus =0.008 g/m3. Both are within the best 25% of 'like' sites within New Zealand.	NOF Band A E. coli = 39 n/100ml (annual median) In the best 50% of like sites in New Zealand

Note 1: NOF BAND A for E.coli = water suitable for designed use with les 1% risk of infection from contact with water during activities with occasional immersion (such as wading and boating). Band A is suitable for swimming.

Note 2: NOF BAND A for Nitrogen = unlikely to be effects even on sensitive species.

Other

39. In early days, a trading post was set up on the river and barges would travel up through the Tukituki River, and partly up the Waipawa River. Punt and canoe river transport played a part in the early years but by 1867 a coach track to Napier was in existence and river transport was no longer required.

[5] Scenic values graded on a five point scale: dull, ordinary, interesting, impressive, exceptional.

[6] Scenic values graded on a six point scale: dull, uninspiring, moderate, picturesque, impressive, exceptional.

Values Summary

Overarching Value	Sub-value	Description	Outstanding Yes/no	Comments
Cultural	TBC	TBC	TBC	TBC
Recreational	TBC	TBC	TBC	TBC
Ecological	TBC	TBC	TBC	TBC
Landscape	TBC	TBC	TBC	TBC
Natural Character	TBC	TBC	TBC	TBC

Attachment 1

Waipawa River – Cultural Values Report

Key Values
Spiritual values
Wāhi Tapu, wāhi taonga, wai tapu
Mahinga kai, Pā tuna
Pā, Kāinga
Rohe boundary

Table 1: List of documents reviewed

Year	Name	Author
2012	Tukituki River Catchment Cultural Values and Uses	Te Taiwhenua O Tamatea & Te Taiwhenua O Heretaunga for HBRC
2016	Heretaunga Tamatea deed of settlement + documents schedule (specifically statements of association)	Heretaunga Tamatea and the Crown
2018	Cultural Values Table	Hawke's Bay Regional Council

*1. Introduction**

Purpose

The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the Waipawa River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

This report presents the summarised findings of the cultural values attributed to the Waipawa River in those documents referred to in Table 1, above.

The report summarises the cultural values associated with the Waipawa River into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Importance

The Waipawa River is a significant waterway for Heretaunga Tamatea, one of six large natural groups negotiating the settlement of Ngāti Kahungunu Treaty of Waitangi claims. It lies at the heart of their spiritual and physical wellbeing.

The Waipawa River was significant for its resources and the inland access it provided. The river and adjacent lands were associated with the tipuna Te Whatuiapiti.

2. Spiritual Values

A narrative exists on the way in which the Waipawa River came into existence. A large lake was located in what is now the Ruataniwha Plains, which was home to two taniwha. On one occasion a boy fell into the lake and the two taniwha fought over their prey. The resulting destruction on the landscape created breaks in the hills through which the lake drained away. One of the channels through which the lake drained was the Waipawa River.

3. Wāhi tapu, wāhi taonga

From the headwaters to the sea the Waipawa River is considered wāhi tapu.

There are registered wāhi tapu sites in proximity to the Makaroro dam site and within the wider Makaroro catchment (Makaroro is a tributary of the Waipawa and was the site of the proposed Ruataniwha Water Storage Scheme). Wāhi Tapu sites extend along the Waipawa and Tukituki rivers to the mouth. Most of these locations are strategic pā sites, some on top of the surrounding hilltops and some near the rivers such as Ngawhakatatara Pā (also known as Island Pā).

4. Mahinga kai

The River was significant as a mahinga kai providing tuna, pātiki, fresh water koura, water cress and īnanga.

Te Waineo was a camping place near Taumata-a-Meikura where hunters of Ngāti Hinemanu would stay. In the near vicinity of this camp there were several mahinga kai sites along the river. Tahunaatara was a hill where tītī were caught. Omaru and Te Iringa-te-rakau-otane- koeka were places renowned for catching kiwi and huia.

Springhill Scenic Reserve

Springhill Scenic Reserve sits on the Ruataniwha Plains in close proximity to the Waipawa River. It is associated with the narrative of the fighting of the two taniwha after whom the plains are named. The reserve was part of a larger forest that covered the western end of the Ruataniwha Plains. The hapū of Ngāti Pouwharekura, Ngāi Te Rangitekahutia, Ngāi Te Ao and Ngāti Mārau were amongst those hapū who visited this area to gather birds and other foods such as berries and mamaku.

5. Pā, Kāinga, ara

The Waipawa River provides an access way into the Ruahine Range through which the hapū of Heretaunga Tamatea would cross into Mōkai Pātea (another Treaty entity based in Taihape). The river also provided access to resources in the Ruahine Range.

A number of archaeological sites indicating the presence of pā and kāinga have been recorded along Pourerere Road, and near the Waipawa township. Other pā have been recorded up river which show the strategic significance of the Waipawa River. Near the headwaters was Motu-o-Puku pā which belonged to the descendants of Te Rangitekahutia and the descendants of Te Upokoiri.

Pukehou Marae and Mataweka Marae were located near the Waipawa River. The great tipuna, Te Hauapu and his marae were not far from Mataweka. This was a fortified marae and Te Hauapu is buried there. Other ancestors are buried close to the river and there are two urupā further up the river.

Close to its mouth, and just to the southeast of the town of Waipawa, a number of archaeological sites have been recorded along Pourērere Road indicating the presence of pā and kāinga.

Other riverside pā are located upriver towards the mountains. This shows the strategic significance of the Waipawa River. The pā include Te Pari-o-Koro pā and Tukipoho pā, which belonged to Te Rangitetataiho and his son-law Te Rangitotohu.

A trading post was set up on the river. Boats would travel up and down from the Tukituki River mouth.

6. Rohe boundary

The river also acted as a boundary.

7. Archaeology

Figure 1: Archaeological Sites on the Waipawa River – near Waipawa township.

Figure 2: Archaeological Sites on the Waipawa River – above Waipawa township.

8. Statutory Acknowledgement Area of Interest

Figure 3: Heretaunga Tamatea Area of Interest

9. Resource Management Plans

The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to the Waipawa River. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Iwi and Hapū Resource Management Plans
Kahungunu ki Uta, Kahungunu ki Tai: Marine & Freshwater Fisheries Strategic Plan
Mana Ake - An Expression of Kaitiakitanga, Te Taiwhenua o Heretaunga

Regional Resource Management Plan
Section 5.9 (Tukituki River Catchment) – various objectives, policies, limits and targets apply to water quantity and water quality
Catchments Sensitive to Animal Effluent Discharges (Schedule 6b)
Minimum Flow Rivers (Schedule 7)
Rivers Considered for Riparian Protection (Schedule 8)
Schedule 14c – Tukituki River Sub-catchments
Schedule 15 – Tukituki Plan Change 6 – Water Management Zones

Central Hawke's Bay District Plan
Appendix C – Schedule of sites of cultural significance to tāngata whenua – contains archaeological sites
Appendix H – Schedule of identified community facilities includes several marae – for information purposes only (no rules).

Attachment 2: Photographs – Waipawa River

Waipawa River at State Highway 50

Waipawa River gorge

Waipunga River

Key Cultural Values
Wāhi Tapu, wāhi taonga, wai tapu
Mahinga kai, Pā tuna
Pā, Kāinga
Rohe boundary

Table 1: List of documents reviewed

Year	Name	Author
1992	Wai 119: The Mohaka River Report	Waitangi Tribunal
1997	Fisheries Resource Inventory: The Mohaka River	Matt Hickey, Fish and Game NZ
1997	Cultural Health Assessment of the Mohaka, Waikari and Waihua Rivers	Ngāti Pāhauwera Development and Tiaki Trust
2004	Wai 201: The Mohaka ki Ahuriri Report	Waitangi Tribunal
2010	Background to Settlement Aspirations and Expectations	Ngāti Hineuru
2015	Ngāti Hineuru Deed of Settlement documents	Ngāti Hineuru and the Crown
2016	Statutory Acknowledgement Document	Hawke's Bay Regional Council

Discussion

*Purpose of report **

1. The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the Waipunga River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).
2. This report presents the summarised findings of the cultural values attributed to the Waipunga River in those documents referred to in Table 1, above. For clarification, the Waipunga River has been identified as potentially outstanding for the cultural value set only. In accordance with decisions made by the RPC in May 2018, this report does not discuss the recreation, landscape and ecology values associated with the Waipunga River.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

3. The report summarises the values into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.
4. Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Overview

5. The Waipunga River is culturally significant for the people of Ngāti Hineuru. The River is one of the iwi's most important taonga and is associated with many important mahinga kai, kāinga and pā. There are numerous settlements and sites of significance.
6. Hineuru's rohe was an important strategic position as it lay across the main access routes from Hawke's Bay to Taupō, Rotorua and the Bay of Plenty.
7. Notwithstanding the difficult location and harsh winter climate, the Tarawera area was densely settled with extensive cultivations. The forest around the Waipunga River was very dense and provided many important resources including harakeke, toitoi, birdlife and a range of plants used for medicinal purposes (rongoā). The river itself was abundant with fish species, including tuna, trout and koura. Hangi stones, graded into different types, were collected from the river bed. A range of other stones were highly prized for adzes and patu.

Location

8. The Waipunga River is a tributary of the Mohaka River, located between Taupō and Napier in New Zealand's North Island. It runs roughly 50 km from its source near the eastern edge of the Volcanic Plateau to its junction with the Mohaka, of which some 15 km follow alongside the Napier-Taupō highway (State Highway 5). It is perhaps most notable for the scenic Waipunga Falls, visible from a rest stop along the highway.
9. The Waipunga River can be seen in Figure 1.

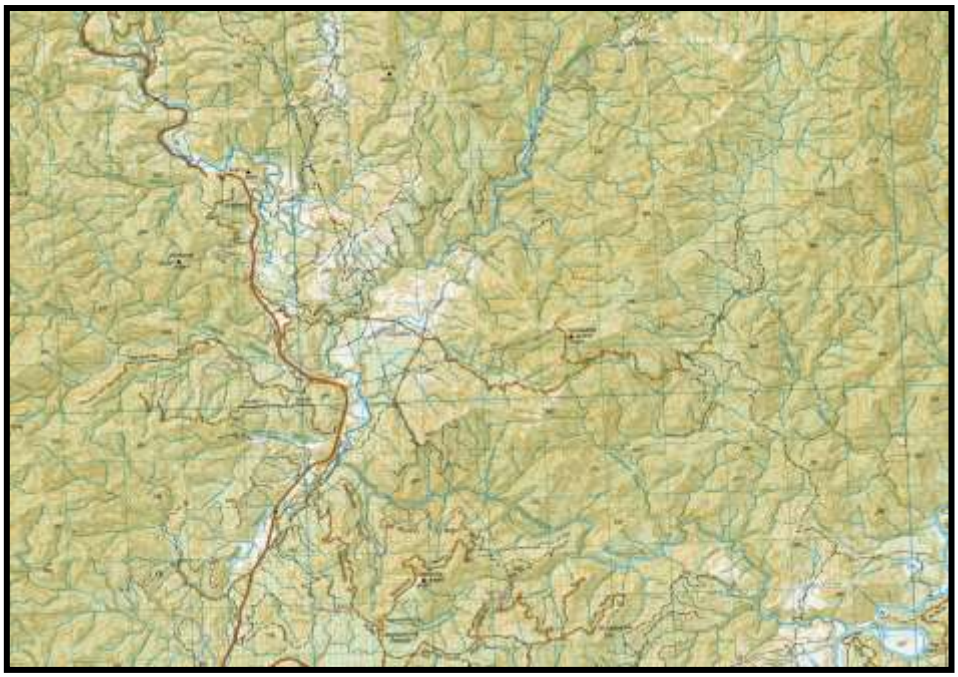

Figure 1: Waipunga River

Cultural values

Importance

10. Ngāti Hineuru has a strong cultural, spiritual, historical, and traditional association with the Waipunga River. The River acted as one of the iwi's most important taonga and is associated with many important mahinga kai site, kāinga and pā. There are numerous settlements and sites of significance (Deed of Settlement).

11. Ngāti Hineuru's traditional boundaries are defined by rivers and mountains: in this respect Titiokura, Maungaharuru, Mohaka, Te Hoe, and Waipunga rivers tend to be highlighted. Their main villages were at Waiparati, Te Haroto, Tarawera and Runanga.

12. Hineuru had a large zone of settlements along the Waipunga River where the Tarawera township exists today and has been permanently occupied by Hineuru since the time of their ancestress Hineuru. Resources were collected and managed, and were to that extent "owned" by whanau groups, but were swapped around and shared. The iwi was the entity within which whanau shared resources and which came together collectively in times of trouble.

13. Although in a mountainous region lying across the main divide, Hineuru's rohe was a strategic position as it lay across the main access routes from Hawke's Bay to Taupō, Rotorua and the Bay of Plenty. Prior to the confiscations in the 1860's, the District Land Purchase Commissioner noted that there was a major Māori route running inland from Hawke's Bay to Taupō. This was the Waipunga River down to Tarawera, to the Mohaka and across the Titiokura saddle to the Kaiwaka and Waiohingaanga (Esk) rivers. The route was also used frequently by early European travellers and traders.

14. Richard Moorson has coined the phrase 'Tarawera corridor' as a way of emphasise the particular importance of the Waipunga valley as a communications route between inland Hawke's Bay and the Kaingaroa plateau. There were also regional patterns of trade by which inland iwi like Ngāti Hineuru traded commodities with coastal groups, building what can be called commercial and economic relationships with their neighbours. Traces of this traditional commerce continued to function until quite recently.

Wāhi tapu, wāhi taonga, wai tapu

15. Many people who gave evidence in the various Waitangi Tribunal inquiries spoke about the sacralised qualities of this interior landscape, especially of the rivers (notably the Mohaka, Waipunga, Hauturu and Te Hoe) and the mountains (Titiokura, Maungaharuru, Pirinoa).

16. The Waipunga Falls were a landmark and taonga of great beauty, which features three parallel columns of water.

17. The Waipunga hot springs, near the Tarawera township, were used for bathing, rongoā and cooking.

18. The Waipunga River provided drinking water, was a source of spiritual cleansing, and was considered to have healing properties. It was used with the healing of women after they had given birth, used for the washing of Tupapaku and was an important part of the ta moko process.

Mahinga kai

19. Notwithstanding the difficult location and harsh winter climate, the Tarawera area was densely settled with extensive cultivations. The forest around the Waipunga River was very dense and provided many important resources including harakeke, toitoi, birdlife and a range of plants used for medicinal purposes. The river itself was abundant with fish species, including tuna, trout and koura.

20. Hangi stones, graded into different types, were collected from the river bed. A range of other stones were highly prized for adzes and patu.

Pa, Kāinga, ara

21. The Tarawera corridor was an area of especially dense settlement. European observers noted that in 1869 (after the land confiscations) that from Waiparati to the edge of the plains were deserted kāinga and deserted plantations, "showing that to within the last few months the country has been thickly populated". There had been three main villages, all abandoned at that time of the aftermath of Omaranui, Te Haroto ("which belonged to the late chief Rangihiroa"), Waiparati ("another deserted Hauhau kainga") and Tarawera ("Nikora's pā").

22. But there were many many other pā, kāinga, cultivations, mahinga kai and urupā – many listed by people in evidence in remembered history as being used since 1840. The density of reference, of place names, villages, urupā, and resource gathering places in these narratives is very striking. The landscape is a culturally dense one loaded with a wealth of place names and remembered events.

Conflict

23. Rahui and Tangataiti were appointed as guardians of the principal access route from Tarawera to the Coast. The brothers were eventually killed in defence of this route, and as a result a rahui was placed over the river.

Rohe boundary

24. Ngāti Hineuru's traditional boundaries are defined by rivers and mountains: in this respect Titiokura, Maungaharuru, Mohaka, Te Hoe, and Waipunga rivers tend to be highlighted.

Archaeology

25. Figure 2 identifies archaeological sites in close proximity to the Waipunga River.

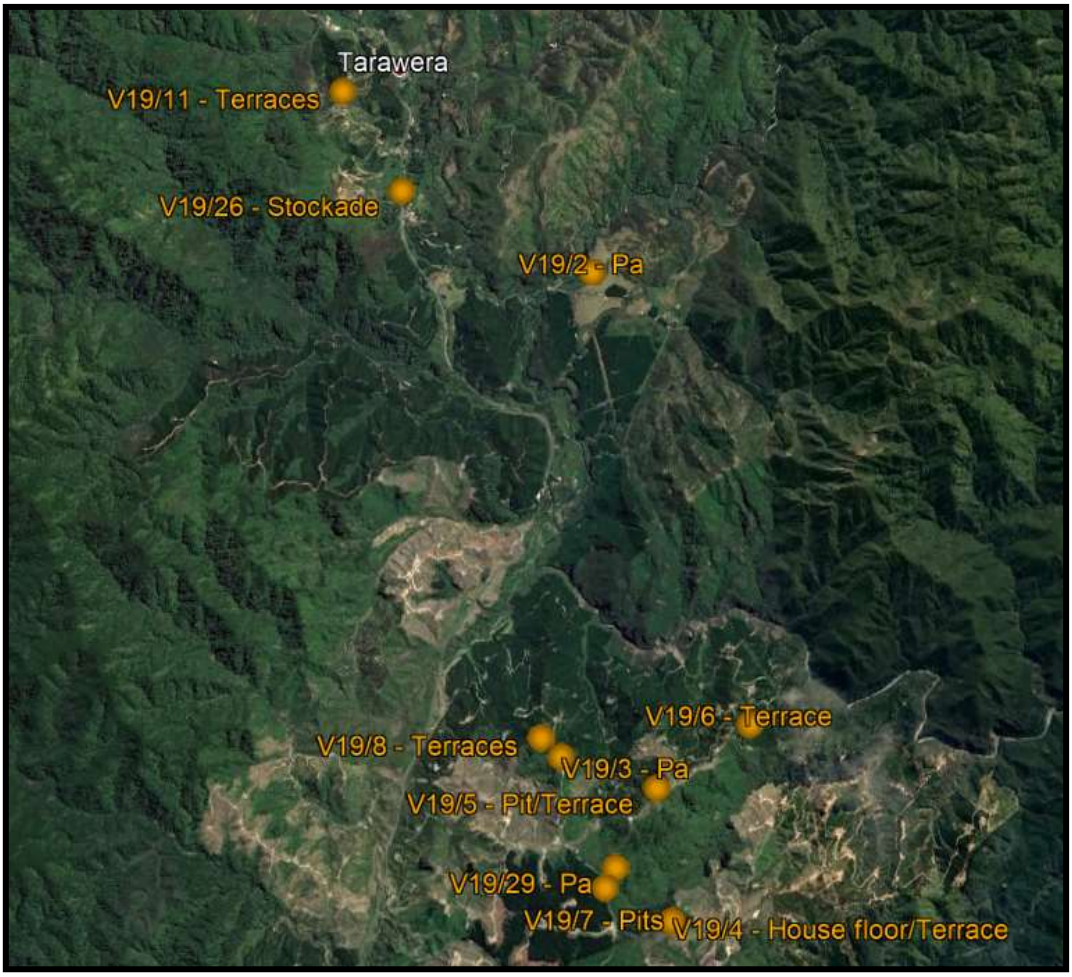

Figure 2: Archaeological sites in close proximity to the Waipunga River

Statutory Acknowledgement Area of Interest

26. Figure 3 details the Ngāti Hineuru Area of Interest.

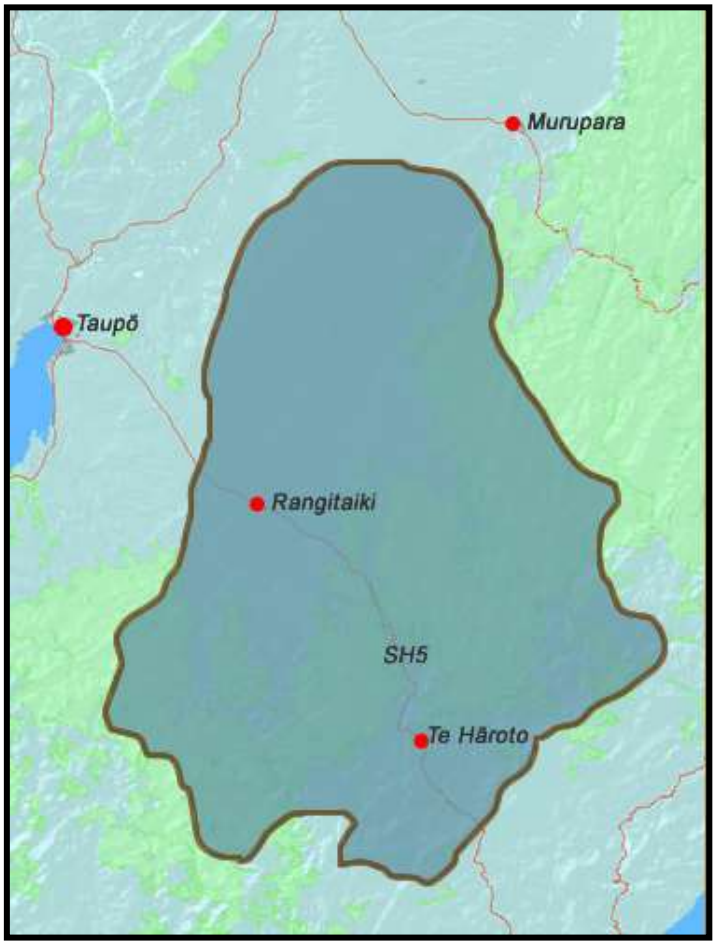

Figure 3: Ngāti Hineuru Area of Interest

Resource Management Plans

27. The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to the Waipunga River. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Regional Resource Management Plan
Catchments Sensitive to Animal Effluent Discharges (Schedule 6b) Rivers Considered for Riparian Protection (Schedule 8)

Regional Coastal Environment Plan
Specific water quality standards apply to Mohaka River Catchment • 50 Faecal Coliforms (cfu/100ml) • 10 Suspended Solids (mg/l)

Hastings District Plan
The Central Ranges Outstanding Natural Landscape Area includes the Waipunga/Tarawera Special Character Area

Wairoa River

Key Values
Cultural
Recreation
Ecology (wildlife, fisheries)
Landscape (geological features)

Table 1: List of documents reviewed

Year	Name	Author
1979	64 New Zealand Rivers	Egarr, Egarr & Mackay
1981	New Zealand Recreational River Survey	G & J Egarr
1988	Wildlife and Wildlife Habitat of Hawke's Bay Rivers	G.R. Parrish
1998	East Coast Conservation Management Strategy: Southern Coast Sub Region.	Department of Conservation
2000	Te Iwi o Rakaipaaka Hapū Environment and Resource Management Plan	Nga Hua o Te Taiao Rakaipaaka
2004	Potential Water Bodies of National Importance	Ministry for the Environment
2004	Potential Water Bodies of National Importance for Recreation Value	Ministry for the Environment
2006	Areas of Significant Conservation Values: HB Coastal Marine Area (HBRC Report Number 4203 - Draft)	Hawke's Bay Regional Council
2008	Wetland Monitoring Review – A Review of Hawke's Bay Regional Council's Wetland Monitoring	Hawke's Bay Regional Council
2010	Recreational Use of Hawke's Bay Rivers – Results of the Recreational Usage Survey 2010	Hawke's Bay Regional Council
2012	River Values Assessment System (RiVAS)	Lindis Consulting
2014	Jet Boasting NZ – Rivers Information	Jet Boating New Zealand
2016	New Zealand Geo-preservation Inventory	Geological Society of New Zealand
2016	Iwi and Hapū of Te Rohe o Te Wairoa Deed of settlement + documents schedule	Iwi and Hapū of Te Rohe o Te Wairoa and the Crown
2016	New Zealand Waterfalls	Waterfalls.co.nz

2016	Wairoa Fisheries Catchment	Fish and Game New Zealand
2017	New Zealand Landscape Behind the Scene	P. Williams
2017	Whakaki Lake & Waiora River – A better place for Wairoa People	Hawke's Bay Regional Council
2018	Cultural Values Table	Hawke's Bay Regional Council
2018	No-swim zone for Wairoa River	Māori Television
2018	Land Air Water Aotearoa (LAWA)	Hawke's Bay Regional Council
2018	Swimmers told to stay out of Wairoa River due to high E coli levels	Stuff.co.nz
2018	Summary of cultural values associated with water bodies in Hawke's Bay, Wairoa District – Turirioa, Huramua & Awamate Catchment (2018)	Ngāti Kirituna Hapū – Ki Whakaki Nui-a-Rua, Allen Smith, Christine Smith
2018	Wairoa River Trout Fishing	nz.fishing.com
2018	Visit Wairoa	Wairoa District Council
2018	Whakamahi Lagoon Wildlife in New Zealand	Protected Planet

Discussion

Purpose of report

1. The purpose of this report is to assist the RPC members to determine whether any of the values of the Wairoa River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

2. This report presents the summarised findings of the values attributed to the Wairoa River in those documents referred to in Table 1, above. In accordance with decisions made by the RPC in June 2017, economic and consumptive use values have not been discussed in detail in this report.

Overview

3. The Wairoa River is a large river which begins the confluence of the Hangaroa River and Ruakituri Rivers just before Te Reinga Falls. The length of the river is approximately 65 km, flowing south through the town of Wairoa and into the Wairoa River estuary where it discharges to the sea.

4. The Wairoa River is popular for a range of recreational activities such as water skiing, rowing, sailing and swimming due to its wide, slow moving nature. The river is popular for kayaking and salmonid angling between Te Reinga Falls and Marumaru.

5. The full Māori name of the river is *Te Wairoa Hōpūpū Hōnengenenge Mātangi Rau*, which means the long, bubbling, swirling, uneven waters. The ancestral canoe Tākitimu travelled up the river and landed near where the Tākitimu marae now sits. The river has significant cultural and spiritual values.

6. The Wairoa River has the region's largest catchment of around 660 km^2 in size. The land use in the catchment is predominately farming and forestry followed by urban areas. A significant amount of sediment enters the Wairoa River from erosion on the hill country. Stormwater and wastewater from the Wairoa Township is discharged into the estuary area.

7. Historically, the Wairoa River mouth has regularly closed up due to the sea currents, causing flooding of the low lying areas near the township. To prevent flooding, the Wairoa River mouth is manually opened by Hawke's Bay Regional Council using a digger, when conditions allow.

8. Despite significant modifications and discharges, the Wairoa River estuary has high fisheries and wildlife values, and is listed as a Significant Conversation Area in the Hawke's Bay Regional Coastal Environment Plan. The Wairoa River has been identified as one of the six 'environmental hotspots' by Hawke's Bay Regional Council, and funding has been allocated towards improving the area.

Location

9. The Wairoa River is located in northern Hawke's Bay. Major tributaries of the Wairoa River are the Hangaroa River, Ruakituri River, Mangapoike River, Mangaaruhe River, Waiau River and the Waikaretaheke River.

10. The location and extent of the Wairoa River can be seen in Figures 1 and 2, below.

Figure 1: Wairoa River

Figure 2: location of Wairoa River

*Cultural values **

11. The Wairoa River is significant to the iwi and hapū of Te Rohe o Te Wairoa. People of upper and lower Wairoa were descendants of Kahungunu's marriage to Rongomaiwahine through their eldest son Kahukuranui and his son Rakaipaaka and daughter Hinemanuhiri.

12. The river is regarded as tapu. It is bound by rituals and traditions, which stem from gods and belongs to their ancestors. The water of the Wairoa River was used for purification, ancient chants and prayers. The river was also a major avenue for trading and commerce and an important mahinga kai.

13. It is said that the Tākitimu waka came up the Wairoa River and landed at Makeakea Stream. Te Reinga Falls, the starting point of the river, is associated with Hinekorako and Ruamano, which were taniwha carried to Aotearoa on the Tākitimu waka. The river mouth is also associated with two taniwha engaged in an ongoing struggle between Tapuwae and Te Maaha.

14. Attachment 1 contains a more detailed explanation of the cultural values associated with the Wairoa River.

Recreation values

15. The lower reaches of the Wairoa River are popular for a range of recreational activities such as water skiing, waka ama, rowing, sailing and swimming. This area is also highly valued for white baiting between August and November.

16. The water quality in this area currently has high levels of bacteria and is unsafe for swimming, this has a significant impact on the recreational values of this area.

17. In 2004, The Wairoa River was recognised as a Potential Water Body of National Importance for recreation by the Ministry for the Environment.

18. Recreational activities which take place on the Wairoa River are discussed in more detail below.

Angling

19. Both rainbow and brown trout are present in the Wairoa River, which average around 1.5 kg and are present in reasonable numbers. The NZ fishing website advises anglers that the Wairoa River is best known for its tributaries which provide world class fishing.

20. The majority of angling occurs at the beginning of Wairoa River below Te Reinga Falls. The river is open to fishing all year round and at times trout larger than 1.5 kg are caught here.

* The HBRC and authors of this report are aware there are numerous areas, including waterbodies, where two or more iwi groups have agreed, shared interests and/or contested overlapping claims within the Hawke's Bay region. The information presented in this report is not intended to imply any exclusive rights over particular waterbodies for one or more iwi groups, nor does it confirm the validity of the claims of any group(s) over that waterbody. The information is solely for the purpose of recording important cultural and spiritual values identified by iwi groups in the region as sourced from existing published documents.

21. The NZ fishing website describes the Wairoa River as a river which is silt laden and not particularly attractive, further advising that its banks are often lined with willows making access difficult in places.

22. In 2012, the Wairoa River was identified as locally significant in the Hawke's Bay RiVAS assessments for salmonid angling.

Boating

23. The Wairoa River provides a 20 km stretch of easy jet boating water up to Marumaru and slightly beyond depending on the water levels. During low flows, the ledges of rock across the river above Marumaru impede navigation.

24. The Wairoa River is used for rafting and kayaking, with the most popular trip being from Te Reinga Falls down to Marumaru. Paddling can occur past Marumaru however, the river is flat and sluggish past this point.

25. In 1981, The Recreational River Survey assigned the recreational and scenic values of the Wairoa River an 'intermediate[1]' and 'moderate[2]' rating, respectively.

26. The Wairoa River does not feature in the RiVAS assessment undertaken in Hawke's Bay for whitewater kayaking. However, it is noted that that the flatwater of the river is sometimes used by whitewater kayakers for slalom, park'n'play and training.

Ecology values

27. The Wairoa River Estuary is part of a much larger wetland complex which includes Ngamotu, Ohuia, Waihoratuna, Wairau, Te Paeroa, Patangata and Whakaki Lagoons. Collectively these wetlands constitute the largest such system on the east coast of the North Island.

28. The Wairoa River is the discharge area for a number of non-point and point source discharges which severely impacts on its ecological values. The town's stormwater and wastewater flow directly into the river at certain times, and there are both active and closed landfills near the river mouth. Elevated bacteria levels are generally observed after heavy and prolonged rainfall.

Fish

29. The Wairoa River Estuary, and its associated wetland areas, provide an important habitat for shortfinned eel and whitebait spawning. The area is also an important access point into inland waters for a number of native freshwater species including longfinned eel, smelt, koaro, redfin bull, bluegill bully, torrentfish, lamprey and cran's bully.

30. The Hawke's Bay Regional Coastal Environment Plan identifies the Wairoa River Estuary, and its associated coastal wetlands, as having regionally important fisheries values.

31. In 2012, the Wairoa River was identified as nationally significant in the Hawke's Bay RiVAS assessments for native fish.

Wildlife

32. A large section of the Wairoa River Estuary is located within the Whakamahi Wildlife Management Reserve which is around 144 hectares in size and managed by the Department of Conservation. This area supports both introduced and native waterbirds and has breeding populations of Canadian Goose and a small number of South Island pied oystercatcher.

33. The Whakamahi Wildlife Management Reserve includes the lagoons, sandspit and mudflats connected with the Wairoa River mouth and the Whakamahi Lagoon. The Whakamahi Lagoon, and its associated sandspit and tidal flats are connected to the Wairoa River. The bar is highly mobile and its outlet location changes frequently. The extent of the Whakamahi Wildlife Reserve can be seen in Figure 3 below:

[1] Recreational values graded on a five point scale: insignificant, low, intermediate, high, exceptional

[2] Scenic values graded on a six point scale: dull, uninspiring, moderate, picturesque, impressive, exceptional.

Figure 3: Whakamahi Wildlife Management Reserve

34. Hawke's Bay Regional Council have conducted ecological surveys in this area since 2003. The survey results indicate that human disturbance along the spit bar is a problem for ground nesting birds causing a low diversity of bird species.

35. In 2012, the Wairoa River was identified as regionally significant in the Hawke's Bay RiVAS assessments for native birdlife.

Landscape/scenic values

36. The Waiora River begins at the Te Reinga Falls. A short distance after the falls, the river begins to flatten out and flows predominately through farmland, then urban areas in its lower parts. There are high limestone bluffs standing above the hills which provide a rugged backdrop in its initial reaches.

37. Te Reinga Falls consist of four waterfalls which tumble down in stages and into a narrow channel that creates a large amount of mist on the water.

38. In 1979, the scenic values of the Wairoa River were assessed in "64 New Zealand Rivers" which provided an in-depth scenic evaluation of sixty four of New Zealand's major Rivers. As part of this study, the section of Wairoa River between Te Reinga Falls and Marumaru was given an 'interesting'[3] scenic rating, with the section of river between Marumaru and the sea given an 'ordinary' scenic rating.

39. In 1981, The New Zealand Recreational River Survey assigned the scenic values of the Wairoa River a 'moderate'[4] rating and specifically described the Te Reinga Falls as very scenic.

40. The NZ waterfalls website describes Te Reinga Falls as spectacular, it advises that the view is not perfect due to limited access.

41. Photographs of the Wairoa River are contained in Attachment 2.

Geological features

42. Te Reinga Falls and Te Reinga Cave are located at the beginning of the Wairoa River. The falls are easily accessible and a local tourist attraction. The cave system is difficult to access and has no official access track.

43. The National Geo-preservation Inventory, which identifies and ranks geological features according to their relative significance, classifies Te Reinga Cave system as nationally significant and Te Reinga Falls as regionally significant. Both are described in more detail in Table 2.

[3] Scenic values graded on a five point scale: dull, ordinary, interesting, impressive, exceptional.

[4] Scenic values graded on a six point scale: dull, uninspiring, moderate, picturesque, impressive, exceptional.

Table 2: Key geological features - Wairoa River

Geological feature	Description
Te Reinga Cave System	Te Reinga Cave is a major cave system in Pliocene limestone. Its system consists of four cave segments with a total surveyed length of 5.2 km and vertical depth of about 140 m. It is the largest known cave system on the east coast. Although it has not been dye traced, its resurgence is thought to be the large spring which is located behind Te Reinga marae. This is around 400 m from the end of the explored cave and around 80 m above sea level. There is no official access into Te Reinga Caves, with the unofficial access being slippery and dangerous.
Te Reinga Falls	Te Reinga Falls are a major waterfall over Pliocene calcareous sandstone and limestone, with rich Pliocene fossils. The falls are officially four waterfalls, which tumble down in stages and into a narrow channel that creates a large amount of mist on the water. The view is not perfect due to limited access - the waterfalls are partially seen from the official lookout.

Naturalness/intactness of waterbody

44. The Wairoa River is not in a natural state. As discussed earlier in the report, a number of non-point and point source discharges flow directly into the Wairoa River, and the river mouth is artificially opened on occasions to ease flooding.

Water Quality

45. Hawke's Bay Regional Council regularly monitors the quality of water in the Wairoa River for both recreational and ecosystem purposes.

46. The water quality of the Wairoa River with regard to 'recreation' and 'ecosystem health' is discussed below.

Water quality – recreation

47. Hawke's Bay Regional Council regularly samples the water quality of the Wairoa River for *E.coli* at the Ski Club Ramp. *E.coli c*oncentrations are measured at these sites to determine whether a site is suitable for full immersion activities such as swimming. An overall bacterial risk rating is assigned based on three years of data.

48. The water quality in the lower Wairoa River currently has high bacteria levels and is not safe for swimming. Sampling results are outlined in Table 3.

Table 3: Recreational water quality – Waiora River: Ski Club Ramp (2016).

Monitoring site	Microbiological Indicator (*E. coli*)	Overall bacterial risk rating
Waiora River (Ski Club Ramp)	E. coli level significantly vary, in the last three years lowest reading = 6 cfu/100ml and highest reading = 20,300 cfu/100ml.	HIGH RISK - water quality is not suitable for swimming - this site does not meet the water quality standards for faecal indicator bacteria.

Water quality – ecosystem health

49. Hawke's Bay Regional Council regularly monitors the water quality of the Wairoa River at Rail Bridge, which is classed as a lowland rural site (see Table 4). The nitrate and ammonia attribute bands provide an indication of the chronic toxicity risk to aquatic animals.

Table 4: Water quality – Wairoa River: Railway Bridge (2016).

Monitoring site	Water clarity	Nitrogen	Phosphorus	Microbiological Indicator (*E. coli*)
Waiora River (Rail bridge)	Turbidity = 7.44 NTU; Black disk = 0.5 metres. Turbidity state and black disk are in the worst 25% of like sites within New Zealand.	NOF BAND A Total Nitrogen = 0.23 g/m3; Total Oxidised Nitrogen = 0.0325 g/m3 (Annual median) and 0.299 g/m3 (95^{th} percentile); Ammoniacal Nitrogen = 0.0069 g/m3 (Annual median), 0.0381 g.m3 (annual maximum. All are within the best 25% of like sites in New Zealand.	Dissolved Reactive Phosphorus, and Total Phosphorus are within the best 50% of 'like' sites within New Zealand. Dissolved Reactive Phosphorus = 0.0094 g/m3, Total Phosphorus =0.021 g/m3.	NOF Band A E. coli = 80 n/100ml (annual median) In the best 50% of like sites in New Zealand

Note 1: NOF BAND A for *E.coli* = water suitable for designed use with less than 1% risk of infection from contact with water during activities with occasional immersion (such as wading and boating). Band A is suitable for swimming

Note 2: NOF BAND A for Nitrogen = unlikely to be effects even on sensitive species.

Values Summary

Overarching Value	Sub-value	Description	Outstanding Yes/no	Comments
Cultural	TBC	TBC	TBC	TBC
Recreational	TBC	TBC	TBC	TBC
Ecological	TBC	TBC	TBC	TBC
Landscape	TBC	TBC	TBC	TBC
Natural Character	TBC	TBC	TBC	TBC

Attachment 1

Wairoa River – Cultural Values Report

Key Values
Wāhi Tapu, wāhi taonga, wai tapu
Mahinga kai, Pā tuna
Pā, Kāinga
Rohe boundary

Table 1: List of documents reviewed

Year	Name	Author
1999	Rangahaua Whanui District 4: Te Urewera, Waitangi Tribunal Rangahaua Whanui Series	Anita Miles
2010	Wai 894: Te Urewera Pre-publication, Part 2	Waitangi Tribunal
2011	Ngai Tāmanuhiri Deed of Settlement documents	Ngai Tāmanuhiri and the Crown
2013	Tūhoe Deed of Settlement documents	Tūhoe and the Crown
2015	Wai 894: Te Urewera Pre-publication, Part 6	Waitangi Tribunal
2016	Iwi and hapū of Te Rohe o Te Wairoa Deed of settlement + documents schedule	Iwi and Hapū of Te Rohe o Te Wairoa and the Crown.
2018	http://www.ttotw.iwi.nz/	Tātau Tātau o Te Wairoa Trust

1. Introduction *

Purpose

The purpose of this report is to assist the RPC members to determine whether any of the cultural values associated with the Wairoa River are outstanding for the purposes of the National Policy Statement for Freshwater Management (NPSFM).

This report presents the summarised findings of the cultural values attributed to the Wairoa River in those documents referred to in Table 1, above.

The report summarises the cultural values associated with the Wairoa River into a series of categories. It is recognised that isolating the values into categories can be problematic from a Māori worldview and many of the values are part of a narrative that doesn't fit neatly into categories. However, the intention is not to take a reductionist or isolated approach to cultural values but to try and gain an appreciation of their significance and the level of detail available to progress a plan change. In preparing the reports, it became obvious that all waterways are part of a wider cultural landscape that weaves people and the environment into a rich history of cultural and spiritual association.

Ultimately, the Regional Planning Committee will need to decide what the appropriate threshold is for outstanding cultural values. Any objectives, policies or rules that are proposed to support outstanding waterbodies will be subject to scrutiny and potential challenges by those who may be affected by a plan change.

Importance

The Wairoa River is significant to the iwi and hapū of Te Rohe o Te Wairoa - one of six large natural groups negotiating the settlement of Ngāti Kahungunu Treaty of Waitangi claims.

The Ngāti Kahungunu peoples of the upper and lower Wairoa were descendants of Kahungunu's marriage to Rongomaiwahine through their eldest son Kahukuranui and his son Rakaipaaka and daughter Hinemanuhiri. They have been described as comprising 'a number of distinct tribal groups, all with autonomous leaders' (Wai 894 Tribunal Report).

2. Spiritual values

The Wairoa River is of spiritual significance. The river is regarded as tapu. It is bound by rituals and traditions, which stem from gods and belongs to their ancestors.

The water of the river was used for purification, ancient chants and prayers. It is said that the Tākitimu waka came up the Wairoa River and landed at Makeakea Stream. Te Reinga Falls, the starting point of the river, is associated with Hinekorako and Ruamano, which were taniwha carried to Aotearoa on the Tākitimu waka. The river mouth is associated with two taniwha engaged in an ongoing struggle between Tapuwae and Te Maaha (Deed of Settlement).

3. Mahinga kai

The Wairoa River is an important source of food, including inanga (whitebait), mohoao (flounder), kanae (mullet), tuna (eel), kākahi (fresh water mussels) and koura (fresh water crayfish).

The river mouth lagoons are also an important mahinga kai for tāngata whenua. The Ngamotu lagoon is on the eastern side, the Whakamahi lagoon on the west (Deed of Settlement).

4. Pā, Kāinga, ara

The River was used as a major avenue for trading and commerce. Several important pā sites are located along and at the mouth of the river including Rangihoua/Pilot Hill, this is sacred to tāngata whenua and is a registered archaeological site (Deed of Settlement).

5. Conflict

Fighting between Crown forces and Māori who lived in the district took place from December 1865 to April 1866. This fighting stemmed from the siege of Waerenga a Hika pa (near Gisborne) by Crown forces in November 1865, in which some upper Wairoa Ngāti Kahungunu participated. Crown forces arrived in the Wairoa district in December 1865. On 25 December, a major battle occurred at Omaruhakeke on the Wairoa River. This was followed by another battle on 12 January 1866 at Te Kopani, on the southern shore of Lake

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Waikaremoana. Further operations were conducted until many upper Wairoa people surrendered. During this period, a number of people were killed and homes and property destroyed. The Crown's conduct of hostilities has been a significant grievance for the Tūhoe, Ngāti Ruapani and Ngāti Kahungunu people who submitted claims on these issues (Wai 894 Tribunal Report).

6. Archaeology

The Wairoa River has a large number of registered archaeological sites along it's banks and in the adjacent hills. The images below do not show the many pits, terraces and platforms that are recorded.

Figure 1: Archaeological sites around Wairoa township and the river mouth

Figure 2: Archaeological sites between Wairoa and Frasertown

Figure 3: Archaeological sites north of Frasertown

Figure 4: Archaeological sites around the junction with the Ruakituri and Hangaroa Rivers

7. Statutory Acknowledgement Area of Interest

Figure 5: Te Rohe o Wairoa Area of Interest

8. *Resource Management Plans*

The following tables list any relevant resource management plans developed by iwi/hapū, the regional council or territorial authorities. The tables include any specific provisions that apply to the Wairoa River. They do not include all of the general policies or rules that may apply. Water quality and water quantity provisions have been included as it is recognised that these aspects can significantly impact on cultural values.

Regional Resource Management Plan
Specific water quality standards apply to Wairoa River and tributaries upstream of Frasertown • 100 Faecal Coliforms (cfu/100ml) • 25 Suspended Solids (mg/l) Specific water quality standards apply to Wairoa River Wairoa River downstream of Frasertown • 200 Faecal Coliforms (cfu/100ml) • 25 Suspended Solids (mg/l) Known Productive Aquifer Systems (Schedule 4) Rivers Considered for Riparian Protection (Schedule 8)

Regional Coastal Environment Plan
Specific water quality standards apply to Wairoa River • 200 Faecal Coliforms (cfu/100ml) • 25 Suspended Solids (mg/l) Known Productive Aquifer Systems in Hawke's Bay Coastal Environment

Wairoa District Plan
Significant Lakes and Rivers (Schedule 5)

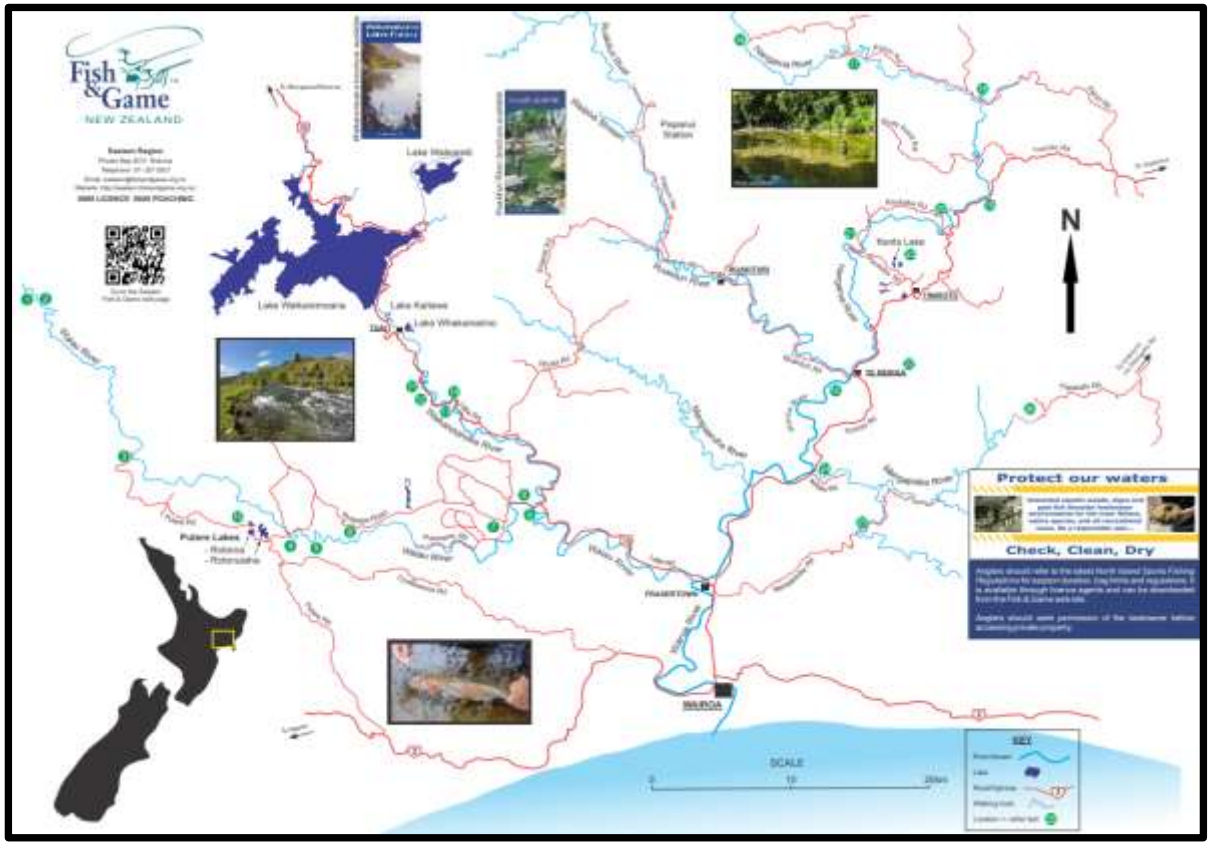
Attachment 2: Photographs – Wairoa River

Wairoa River

Te Reinga Falls

Te Reinga Falls

Wairoa River



Wairoa River and tributaries