APPENDIX I

Recreation Assessment – Rob Greenaway & Associates

November 2021

Motukawa Hydroelectric Power Scheme Reconsenting

Recreation Assessment

Note: Since the lodgement of the resource consent applications for the Motukawa Hydro-Electric Power Scheme in November 2021 (being the application to which this technical assessment relates), the proposal by Manawa Energy has been amended to retain the consented maximum water take from the Manganui River as 5.2 m^3/s. The Assessment of Environmental Effects lodged with the resource consent applications has been amended to reflect this change, but the technical assessments associated with the application (including this one) have not been amended. However, all effects on the environment will either be the same or less than previously assessed in the lodged technical assessments.

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Motukawa Hydro Electric Power Scheme Reconsenting

Recreation Assessment

Prepared for Trustpower Ltd

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Version status:

Final

Motukawa Hydro Electric Power Scheme Reconsenting Recreation Assessment

List of Figures

1 Executive Summary

Trustpower Ltd's resource consents to operate the Motukawa Hydro-Electric Power Scheme expire in mid-2022. This report assesses the effects of the operation of the Scheme on recreation values to assist with the reconsenting process.

The Scheme currently diverts up to 5.2m^3/s of water from the Manganui River via the Motukawa Race to Lake Ratapiko where it is used for generation at the Motukawa Power Station. Water is released into the Makara Stream and then flows into the Waitara River. Water from the Manganui River is diverted to the Motukawa Race by way of a concrete diversion weir and intake structure adjacent to the weir. A minimum flow of 400L/s is maintained in the Manganui River downstream of the weir, and a fish pass allows for the up and downstream passage of trout and native fish species. The western arm of Lake Ratapiko is periodically dredged to maintain generation capacity.

Trustpower is proposing to increase the take from the Manganui River to 7.5m^3/s, which would operate as a 'flood harvesting' exercise with no change to minimum flows.

Kayaking and rafting occurs on the Manganui and Waitara Rivers on high flows (>20m^3/s), with the closest get-in for kayaking located 11km downstream of the weir. Angling on the Manganui River occurs mostly upstream of the weir, and the Waitara River and Lake Ratapiko are also angling settings. Jet boating occurs on the Waitara River, where in its upper reaches the activity requires floods and freshes. Lake Ratapiko is a popular setting for water skiing, jet boating, camping, swimming and other water-based recreation. Whitebait are taken in the lowest reach of the Waitara River. All settings are regionally significant for recreation, although poor access for angling downstream of the weir on the Manganui River restricts fishing there.

Effects of the existing operation of the Scheme on kayaking, rafting and jet boating are less than minor due to: the scale of effects of the diversion from the Manganui River and discharge to the Makara Stream; the separation between the weir and the get-in for kayaking and rafting; and the reliance of kayaking and rafting on flows above 20m^3/s. The existing take of 5,2m^3/s occurs when inflows to the Manganui Weir are greater than 5.7 m^3/s. This flow condition occurs for 32% of the time on average. The estimated corresponding flow at Everett Park, prior to the take having effect, is estimated to be approximately 19.7 m^3/s. At this flow, on average, the loss compared with the natural flow is predicted to be approximately 4.3 m^3/s, and would take between 3 and 4 hours to propagate to Everett Park. This means, at the lowest relevant flow, a potential change of flow at Everett Park from 19.7 m^3/s to 15.4 m^3/s, The duration of effect on the reduction of 'kayakable' flows above 20m^3/s is 8% corresponding with current flows at Everett Park of 15.7m^3/s and 20m^3/s. The existing Scheme operation appears to represent an accepted status quo and is not considered by interviewees to have adverse effects on white water activities.

The additional take of 2.3m^3/s would normally occur when inflows to the Manganui weir are greater than 8.1m^3/s. The corresponding flow at Everett Park, prior to the additional take having effect, is estimated to be approximately 23m^3/s. At this flow, on average, the loss compared with the status quo is predicted to be approximately 1.6m^3/s, and would take between 3 and 4 hours to propagate to Everett Park. This means, at the lowest relevant flow, a potential change of flow at Everett Park from 23m^3/s to 21.4m^3/s, which would remain within the kayakable range.

Lake Ratapiko offers significant regional benefits to recreation. Periodic dredging in the western arm maintains depths suited to water skiing, although this is not the focus of the work. Lake levels are maintained over summer to suit recreational use. The proposed increased take is modelled to have the potential to marginally increase the operating range of Lake Ratapiko over summer (and all year). However, changes are slight and in reality will depend on the chosen daily operating regime, which is expected to continue as currently, with recreation amenity maintained over summer with a focus on weekends and public holidays, and ongoing communication with boating clubs. Water quality in

Lake Ratapiko and at Everett Park on the Manganui River have been assessed by the Taranaki Regional Council as suitable for contact recreation.

The Scheme, both as currently operated and when considering the proposed increased take, has the potential to affect habitat for trout and trout fishing in the reach downstream of the Manganui weir, and to have effects on whitebait species resulting from the diversion of water to the Motukawa Race and their detention in Lake Ratapiko.

Fishing is associated with Māori freshwater values, particularly the availability of mahinga kai. The aquatic ecology assessment (Goldsmith & Ryder 2021) therefore recommends the following measures for both existing and proposed regimes (in accordance with the NPSFM effects management hierarchy):

- The maintenance of the existing fish passes at the Manganui weir;
- Augmenting flows below the weir when water temperatures in the downstream reach exceed 25ºC and when the release of additional flow will reduce that temperature (water in the river upstream of the weir can be equally warm), also reducing the risk of nuisance periphyton growths; and
- Trap and transfer systems for migrating fish in various locations throughout the Scheme.

These methods are considered to be able to minimise and remedy effects on fish populations to the point where they are no more than minor. Managing water temperature in the Manganui River downstream of the weir will maintain the ability to catch trout as much as possible, albeit considering that high water temperatures will also occur naturally.

In summary, the operation of the Motukawa Hydro-Electric Power Scheme maintains in-river recreation values in the waterways of the catchment, enhances them via the provision of Lake Ratapiko, and minimises effects on trout and whitebait via the existing fish pass and proposed mitigations and remedies for fish species.

2 Introduction

This report describes the recreation values of the waterways associated with the Motukawa Hydro-Electric Power Scheme, and assesses the effects of the Scheme on those values.

2.1 Method

This assessment is based on literature review, a site visit, interviews with recreation users of the study area and the review of relevant parallel technical reports, particularly those relating to aquatic ecology (Goldsmith & Ryder 2021) and hydrology (Leong 2021).

2.2 Scheme description and public access

The Motukawa Hydro-Electric Power (HEP) Scheme – dating from the 1920s – diverts up to 5.2m^3/s of water from the Manganui River via the Manganui weir and diversion structure (with fish pass) to Lake Ratapiko. The diverted water first enters a settling pond and travels 4.1km to the Lake in a largely open race (Figure 1). In addition, up to 8m^3/s of water is added to Lake Ratapiko from the surrounding natural catchment.

A residual flow of 400L/s is maintained in the Manganui River downstream of the weir, which is augmented by flows from the Mangamawhete Stream 8km below the Manganui weir. A new fish pass located on the true right of the weir (constructed in 2002) carries 300L/s of this residual flow, with the remaining 100L/s being carried by an older fish pass located on the true left of the weir.

The settling pond has been informally (and without Trustpower's consent) stocked with trout by Taranaki Fish & Game, but access to the pond is at the courtesy of Trustpower, and the continuation of the provision of access by the neighbouring landowner is not encouraged. There is no formed legal access to the pond or to the race (Figure 2). While the New Plymouth District Council owns land located near the Manganui weir (not subject to the Reserves Act 1977), there are no developments for recreation, or formed public access. Several disconnected esplanade reserves border the Manganui River up and downstream from the weir, but do not provide for practical public access.

Lake Ratapiko is created by a dam on the Mako Stream. The Lake is bisected by Ratapiko Road with its western side used over summer by the New Plymouth Water Ski Club (NPWSC), with a club campsite to the west of Ratapiko Road. The campsite features a clubroom, toilets, marina, boat launching ramp and play facilities. The eastern side of the Lake is used by Jet Boating NZ, which has a clubroom, toilets, picnic area and a public launching ramp to the east of Ratapiko Road. The bed and boundary of Lake Ratapiko is owned by Trustpower and public access occurs only via the areas leased to the two boating clubs (Figure 3).

The water level in Lake Ratapiko has a consented maximum level of 198.7 metres above sea level (masl) and a normal operating minimum level of 194masl. Lower levels are permitted for maintenance. Trustpower endeavours to maintain the Lake at the high end of the operating range over summer to enable recreational use. Periodic dredging of the western arm of the Lake is required to maintain operating capacity, with a supplementary advantage to water sports by maintaining depth.

Water is abstracted from Lake Ratapiko – up to the consented take of 7.787m^3/s – at its eastern extremity and passes via a 2.7km tunnel to a penstock above the Motukawa Power Station, from where it is discharged into the Makara Stream. The Makara Stream runs within an inaccessible ravine for 1.9km before entering the Waitara River. There are no recreation facilities at or near the Power Station, although an extensive area of undeveloped legal road extends north, west and south from the top of the penstocks (Figure 4).

Figure 1: Motukawa Hydro Electric Power Scheme location and main features

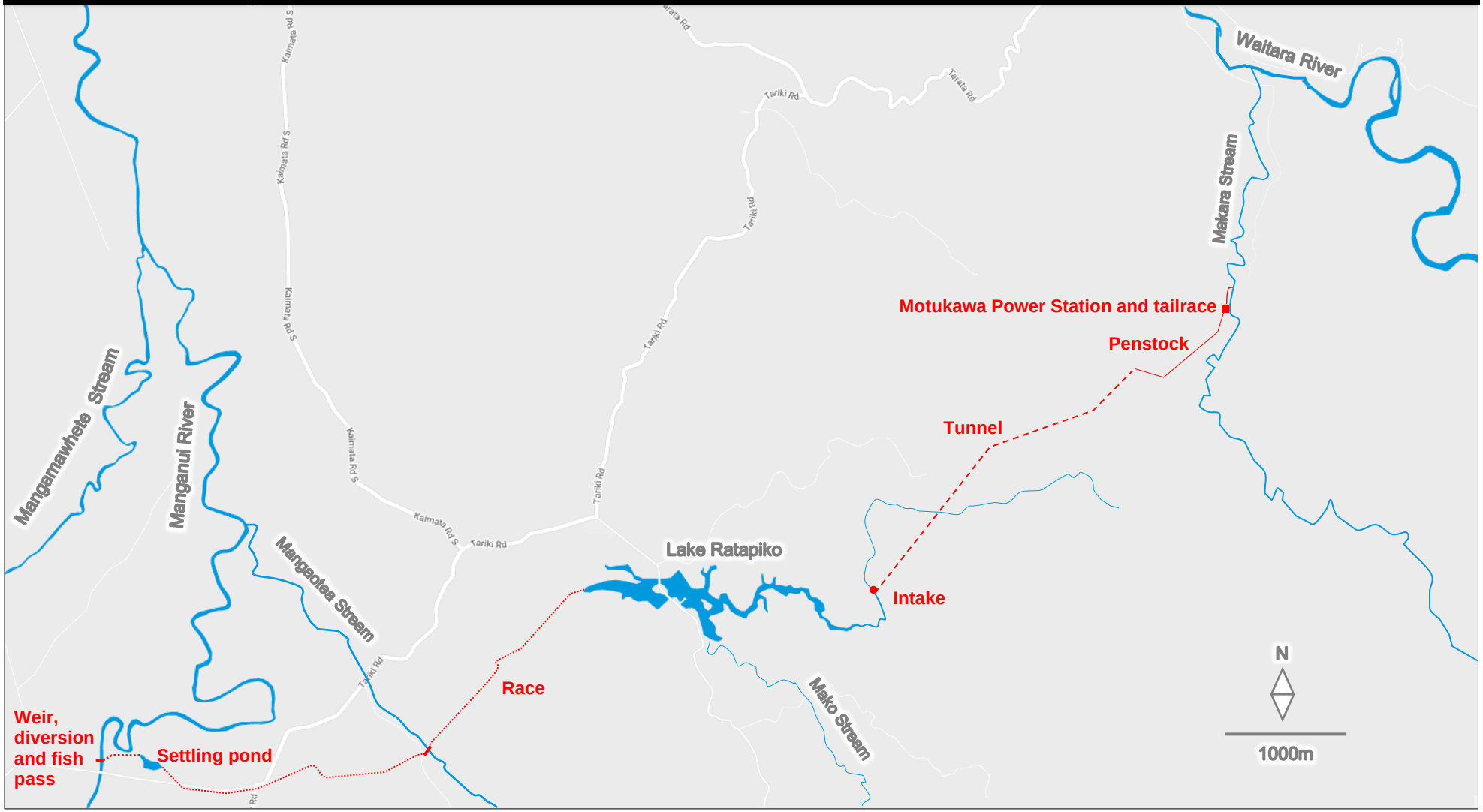


Figure 2: Land ownership at Manganui diversion structure and settling pond

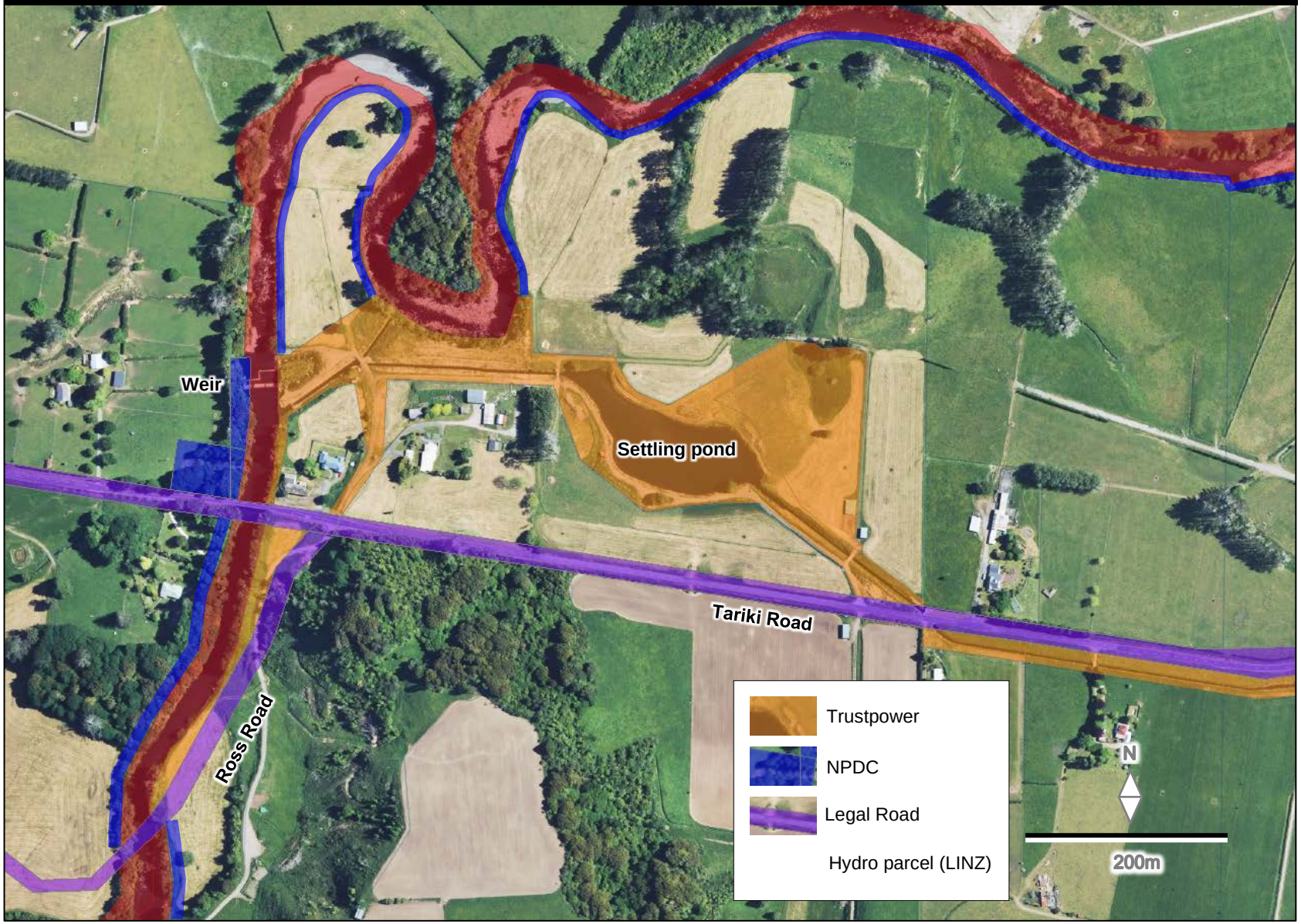


Figure 3: Land ownership at Lake Ratapiko, showing boat club locations

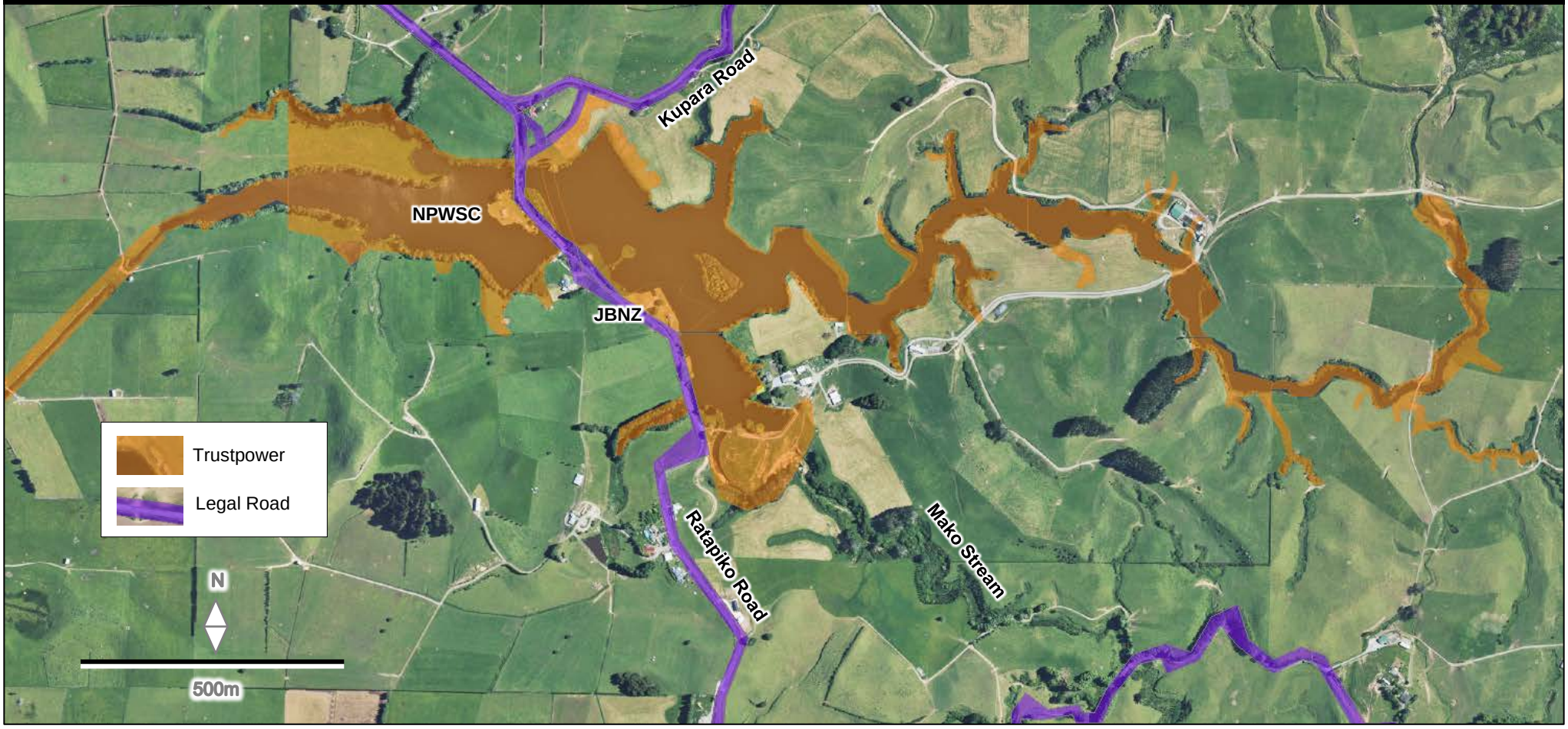
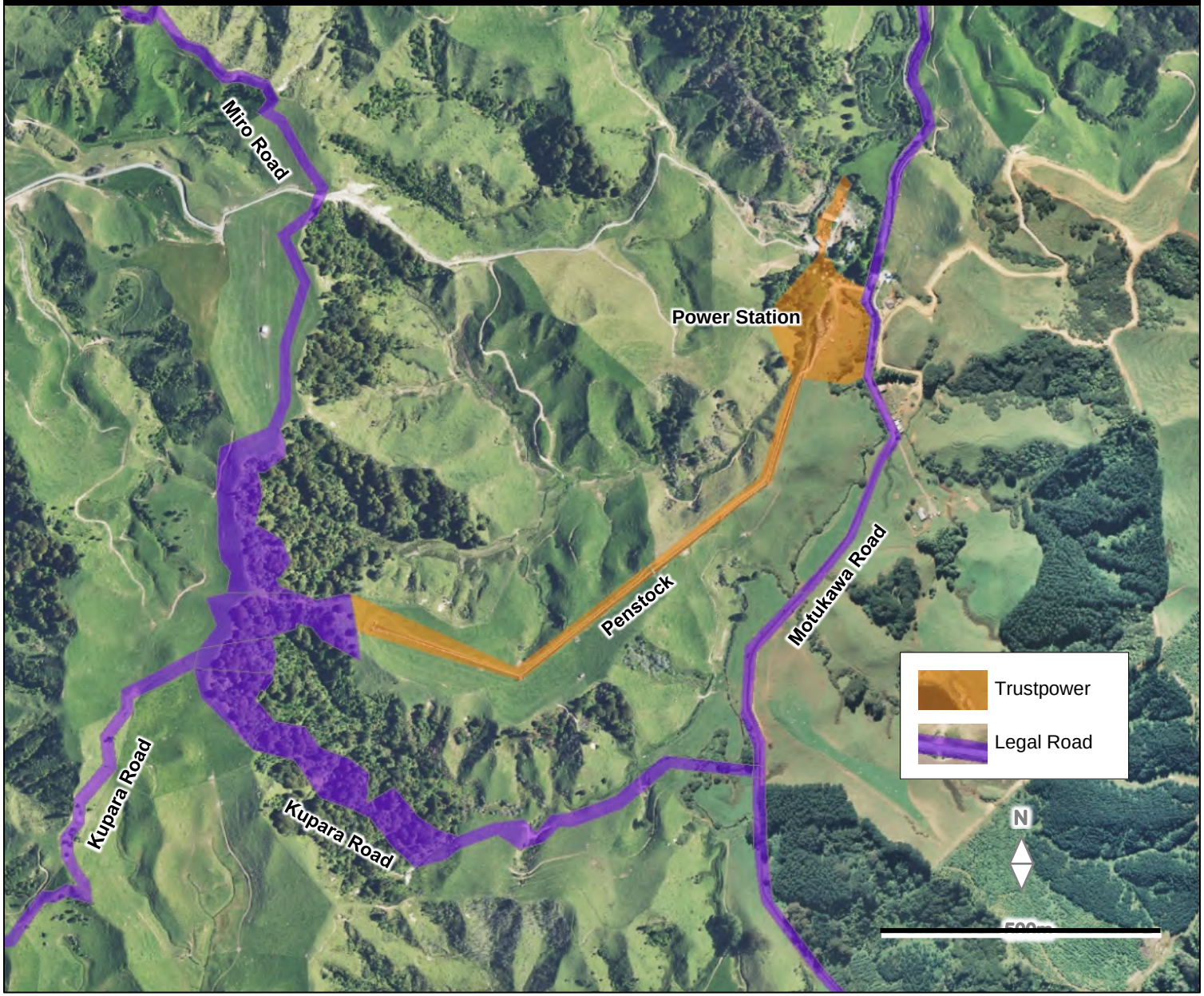


Figure 4: Land ownership at Motukawa Power Station



2.3 Proposed Scheme operation

Trustpower is proposing to increase the existing consented diversion from the Manganui River from 5.2m^3/s to 7.5m^3/s. The proposed increased take is essentially 'flood harvesting' and would occur only during high flow periods. Approximately 4-7% more than the current inflow to the Motukawa Scheme would be taken. There will be no change to the existing residual flow requirement of 400 L/s downstream of the intake. The Condition 5 (Consent 3369-2) requirement for artificial fresh releases is proposed to be replaced with 'temporary reduction / restriction in take' conditions to address high water temperatures in the residual reach of the Manganui River downstream of the Manganui weir, and to augment freshes to reduce the risk of nuisance periphyton growth following periods of low flow in the river.

Flow reductions downstream of the take will be greatest during the wetter months of May to September and there will be no change to median flows downstream of the take in summer (December to February), although mean flows in summer will reduce from approximately 2.3 m^3/s to 2 m^3/s (Leong 2021).

3 Plans and strategies

This section considers relevant regional recreation planning material in relation to recreation values on the Manganui River, Lake Ratapiko, Mako Stream and the Waitara River (the Makara Stream is only referred to in the Proposed New Plymouth District Plan as an unnamed tributary to the Waitara, and the Mangaotea Stream as an unnamed tributary of the Manganui River). The relevant statutory documents are reviewed in the Assessment of Environmental Effects (AEE) (prepared by Mitchell Daysh Limited) accompanying the resource consent application, and in other technical assessments that have been undertaken for the Motukawa HEPS. The National Policy Statement for Freshwater Management (NPSFM), via the application of an effects management hierarchy, is considered in Section 6 of this report.

3.1 Department of Conservation

The **Conservation Management Strategy** (CMS) for the Wanganui Conservancy 1997 – 2007, although dated, remains current. It refers to the Manganui River in only one instance (along with the Waitara) when describing river-based recreation in the Conservancy: (p361)

> *The Conservancy provides a number of important opportunities for canoeing. These range from multi-day journeys on the Whanganui, Rangitikei and Mokau Rivers to short day trips on the Manawatu, Whangaehu, Waitara, Waiwhakaiho and Manganui Rivers. Scenery ranges from remote bush country and dramatic river gorges to rural countryside. Sections of the rivers range in difficulty from Grade 1, (easy, suitable for family groups) through to Grades 4 and 5, (very difficult to extreme, suitable only for experienced canoeists or rafters).*
>
> *Jetboating occurs on the Whanganui, Rangitikei, Manawatu and other rivers. The Manganui o te Ao and Rangitikei are the main rivers for white-water rafting in the Conservancy and are also important for trout fishing.*

The CMS refers to the Waitara as one of several 'notable' waterways in the Conservancy along with the Mokau, Tongaporutu, and Mohakatino Rivers, noting that none of them is formally protected (p151). And that: (p159)

> *The Mokau, Mohakatino, Tongaporutu and Waitara Rivers are used for canoeing. There is growing commercial demand for tourist trips on the Mokau River, visiting sites of scenic and historic interest.*

The CMS notes in general terms, in relation to the Egmont Ecological District: (p128)

> *Removal of water from rivers for hydro-power generation, water supply, horticulture, agriculture, and industry significantly reduces river flows and damages aquatic ecosystems, fisheries, recreation, intrinsic and cultural values.*

3.2 New Plymouth District Council

The NPDC refers to the management of its reserves adjacent to the Waitara River in its **Green Space Management Plan** (2019), identifying four riverside reserves, at Tarata, Huirangi (with no public access) and Mamaku. The Tarata Domain is approximately 5km downstream of the Makara confluence and the Management Plan describes its proximity to the River as contributing to its high amenity values. The Mamaku Esplanade Reserves are described as providing angling access, and are more than 30km downstream of the Makara confluence.

The **Operative New Plymouth District Plan** (2013 update 8g) defines the Waitara and Manganui Rivers – along with 23 other rivers and streams – as Priority Waterbodies, "identified primarily for natural character and/or public access/recreation purposes." (p76).

In reference to "Activities which reduce or detract from the amenity of open space areas", the Operative Plan notes (referring to Lake Ratapiko): (p48)

Activities on the surface of the water are also under the control of the COUNCIL in terms of their 'actual or potential effects' on the environment. Historically, the Maritime Safety Authority has used the Water Recreation Regulations 1979 to ensure the safe use and navigation of waterways. There has been little planning control although in some areas reserve management plans under the Reserves Act 1977 (for example, the Peringa Park Management Plan, Lake Rotomanu) have been used to establish 'user rules'. In other areas, management initiatives have been established between private landowners and lake users (for example, the Lake Ratapiko Recreational Users Policy). [see section 4 of this report]

Because of the limited number of navigable waterways in the district and low demands for use, these approaches have worked reasonably well to date and it is not considered necessary to introduce further controls at this time. Should adverse effects associated with surface water activities arise that cannot be addressed through the existing mechanisms, the COUNCIL can take further action through the provisions of section 17 of the ACT.

The **Proposed New Plymouth District Plan** (Sep 2019) (for which hearings of submissions are currently underway) identifies 58 rivers and streams and four lakes as Significant Waterbodies (in Schedule 9), including the:

- Manganui River (including its tributaries and the Mangamawhete and Waipuku Streams) for: biodiversity, ecological or natural character values; recreational, public, access, scenic or amenity values; cultural values; and water quality values;
- Waitara River (including tributaries that flow continuously or intermittently directly into the Waitara River (for unnamed tributaries, it includes the segments from the confluence with other tributaries to the Waitara River)) for: biodiversity, ecological or natural character values; recreational, public, access, scenic or amenity values and cultural values (not water quality); and
- Lake Ratapiko for ecological or natural character values and recreational, public, access, scenic or amenity values.

3.3 Taranaki Regional Council

The Taranaki Regional Council's (TRC) **Regional Fresh Water Plan for Taranaki** (2001) identifies the Manganui River and the Waitara River below the Manganui confluence as waterbodies with "high natural, ecological and amenity values": (Appendix 1A)

Manganui River

Water quality: Excellent to good water quality throughout whole catchment. Low nutrients above SH3 and at the confluence with the Waitara River.

Recreational and fishery values: Moderate access for native fish. Presence of threatened species. Important habitat for threatened native species. Very popular and highly valued angling river. Very highly rated for recreational uses and values (some swimming).

Aesthetic and scenic values: Very highly rated for aesthetic and scenic values.

Comments: Median flow of 840L/s at SH3. Considerable water movement downstream from Everett Park with some Grade 2 and 3 rapids. Water quantity and flows contribute significantly to aesthetic and scenic values. 53% total riparian cover, consisting of mixed vegetation and exotic trees or pasture.

Waitara River (middle reaches – from confluence with Manganui River to Bertrand Road)

Water quality: No comment

Recreational and fishery values: Large river, access for fish to National Park.

Aesthetic and scenic values: Highly rated for aesthetic and scenic values.

Comments: Median flow of 32,300L/s at Bertrand Road. Noticeable water movement in some sections with numerous rapids but long, calm, flat sections in between. 35% total riparian cover, middle reaches consisting of mono-culture of exotic trees or pasture.

Waitara River (lower reaches – from Bertrand Road to river mouth)

Water quality: No comment

Recreational and fishery values: Large river, access for fish to National Park. Whitebait congregating area. Very highly rated for recreational uses and values (canoeing).

Aesthetic and scenic values: No comment.

Comments: Median flow of 34,000L/s (estimate) at river mouth. River becomes flat and slow moving below Bertrand Rd bridge with some areas of shingle rapids. 35% total riparian cover, lower reaches consisting of barren or introduced grasses and weeds

Lake Ratapiko is not discussed in the Plan.

The 2016 TRC report ***Freshwater bodies of outstanding or significant value in the Taranaki region - Review of the Regional Fresh Water Plan for Taranaki*** sought to identify water bodies that contain outstanding or regionally significant instream values, "in accordance with Section 6(b) of the Resource Management Act 1991 and in light of the National Policy Statement for Freshwater Management 2014, the water body has attributes and values that are more than significant at a local or regional scale." (p1).

The Review found the Waitara 'catchment' (although the Manganui was also assessed separately) to be:

- Not significant for its aesthetic and scenic values;
- One of 12 rivers and streams in the Region to be regionally significant for contact recreation, specifically at the Town Wharf in its lower reaches;
- One of 18 rivers and streams in the Region to be regionally significant for trout fishing, specifically in its mainstem below the Manganui River confluence, and in its tributaries: the Mangamawhete Stream, Lake Ngangana, Lake Ratapiko, Waipuku Stream, Manganui River, Te Popo Stream, Ngatoro Stream and Maketawa Stream;
- One of 20 rivers and streams in the Region to be regionally significant for whitebaiting below the Manganui confluence and 2km upstream of the river mouth;
- One of 51 rivers and streams in the Region to be regionally significant for native fishery habitat values (banded kokopu, giant kokopu, inanga, koaro, lamprey, longfin eels, short jawed kokopu – some of which have recreation value), including the River main stem, main stem, Hitoki, Kaitawanui, Kurapete, Makara, Maketawa, Mako and Mangamawhete streams, Manganui River, Mangaoapa, Mangaotea, Mangapotoa, Mangatengehu, Mangawhio, Mangamawhete, Matau, Ngatoro, Ngatoro-iti, Ngatoro-nui, Piakau, Taramoukou, Te Popo, Waipuku, & Waitepuke streams.

The Review found the Manganui 'catchment' to be:

- One of 20 rivers and streams in the Region to be regionally significant for their aesthetic and scenic values;
- One of 12 rivers and streams in the Region to be regionally significant for contact recreation, specifically at Everett Park downstream of Kurapete Stream;
- One of 18 rivers and streams in the Region to be regionally significant for trout fishing as part of the Waitara catchment (listed above);

- One of 20 rivers and streams in the Region to be regionally significant for whitebaiting below the Manganui confluence and 2km upstream of the river mouth;
- One of 51 rivers and streams in the Region to be regionally significant for native fishery habitat values as part of the Waitara catchment (listed above).

Lake Ratapiko was found to be regionally significant for contact recreation at the 'boat ramp' – although which ramp was not specified.

Four rivers and lakes in the Region were found to be "outstanding and/or needing to be maintained in their high natural state": (p21)

- Hangatahua (Stony) River
- Maketawa and Ngatoro streams
- Lake Rotokare

The Upper Manganui River was given a provisional status: (p57)

> *Another water body – the upper Manganui catchment – has attributes and values that are ranked very high but the overall ranking did not meet the 'outstanding' criterion. However, given the subjectivity inherent in landscape assessments this conclusion should be tested through the public review process for the Freshwater Plan.*

The analysis for the Manganui River was specific about the provisional outstanding status referring to the River upstream of the hydro diversion: (p34)

> *The Manganui River, the largest tributary of the Waitara River, has a catchment area of 294 km². However, the study area relates only to that part of the catchment upstream of the Trustpower Weir for the Motukawa Hydroelectricity Power Scheme and excluding the Te Popo Stream (which has a take from it for Midhirst's community water supply).*
>
> *The Manganui catchment's headwaters lie on the north-eastern slopes of Mount Taranaki. The large river and tributaries meander through the Egmont National Park and through farmland on the upper ring plain, just south of Inglewood until it joins up with the Waitara River. The hydrology of the catchment is complicated by the diversion of water from the Manganui River to the Waitara River for hydroelectricity generation.*
>
> *The river contains regionally important scenic levels and recreational values associated with current water levels and flows – particularly in the upper reaches upstream of the Trustpower weir that provides for hydroelectricity generation (the Motukawa Power Scheme). In the headwaters of the Manganui River, the Manganui Gorge is viewed and enjoyed by thousands of people each year using the ski-field walking track.*
>
> *The Manganui River upstream of the Trustpower weir is largely unmodified (excluding the Te Popo Stream). Because of the Manganui catchment's special status under the Regional Fresh Water Plan for Taranaki, no consents have been granted to take or use surface water from the catchment above the Trustpower weir (excluding the Te Popo Stream). The current water levels and natural flows are therefore a major contributor to the catchment's regionally important natural, scenic and recreational values.*
>
> *The Manganui River is highly valued for angling and provides important habitat for trout spawning. It is the second most fished river in Taranaki (after the Waiwhakaiho).*

Lake Ratapiko was only referenced in the Review – as part of the Waitara catchment – for regionally significant trout fishery values (p43) (although the Lake has very variable angling activity (see Appendix 1)).

The Review concluded: (p57)

The current Freshwater Plan already contains a policy that seeks that the high natural, ecological and amenity values of those rivers and streams be maintained and enhanced as far as practicable, with adverse effects of activities being avoided as far as practicable, or remedied or mitigated. However, as part of the review of the Freshwater Plan, it is proposed that the current broad approach of 'maintenance and enhancement' be further refined, and specific policy be developed in a revised Freshwater Plan for managing specific freshwater values.

3.4 Tai Whenua, Tai Tangata, Tai Ao Te Atiawa Iwi Environmental Management Plan 2019

The rohe of Te Atiawa extends from north to east of the peak of Taranaki Maunga and includes the Manganui River and much of the Waitara River, as well as Lake Ratapiko and the waterways in its catchment. *Tai Whenua, Tai Tangata, Tai Ao* details Te Atiawa's role as kaitiaki, and the application of tikanga to resource management within their rohe. "Developers and other applicants" are encouraged to use the document to inform project discussions with Te Atiawa.

Issues TTOM2, TTOM3 and TTOM6 in the Management Plan refer to freshwater quality and quantity and activities in the beds and margins of waterways and lakes, respectively, and acknowledged potential effects that can result from low flows and over-allocation of water resources on mauri, mahinga kai habitat and species and customary use activities. Policies to manage effects on these values are provided in the Management Plan, including, for example, environmental flows and water allocation limits (TTOM4.2), recommendation that all structures in beds and margins of waterways and lakes should enable fish passage for migratory native species (TTOM6.8), and the provision of access to waterways for, amongst other things, mahinga kai (TTOM7). Issue TTOM8 focuses on the sustainable management of customary, commercial and recreational freshwater fishing, using a variety of techniques – including rāhui – to protect and enhance freshwater fish stocks.

Schedule 7 of *Tai Whenua, Tai Tangata, Tai Ao* identifies specific Areas of Importance to Te Atiawa. These include:

- Everett Park Scenic Reserve
- Manganui River and its tributaries
- Waitara River and its tributaries (specifically noting contemporary harvesting of fish and whitebait)

Cultural and recreation values are often intertwined, and this recreation assessment does not consider cultural values specifically. However, there can be recreation elements to cultural practices, including the collection of mahinga kai.

4 Activity descriptions from literature

Appendix 1 contains a summary of published data relating to recreation, by activity, for the Motukawa catchment. The key findings are:

Trout fishing

- Angling effort in the Taranaki Region tends to be thinly dispersed over approximately 50 waterbodies, with, for the 2014/15 season, only three surpassing 1,000 angler days individually: the Manganui-o-te-ao River (at 1,230 angler days in 2014/15); the Waiwhakaiho River (1,210 angler days) and Lake Mangamahoe (1,210 angler days). The Waitara catchment, including Lake Ratapiko with 80 angler days and the Manganui River with 310 angler days, contributed 6% all angler days across the Region.
- Angling effort in the Waitara catchment was much higher in the 2007/08 season compared with 2014/15, at 1,710 angler days, but previously measured seasons were more similar at 760 angler days in 2001/02 and 410 in 1994/95. Lake Ratapiko and the Manganui River contributed most of the variability with, for Lake Ratapiko, 650 angler days in 2007/08 and 340 in 2001/02, and none in 1994/95; and for the Manganui River 600 angler days in 2007/08, 150 in 2001/02, and 160 in 1994/95. The Waitara River featured consistently low counts, with 30 angler days in 2014/15, 120 angler days in 2007/08, 10 in 2001/02, and 20 in 1994/95.
- Published angling guides refer to multiple fishing opportunities throughout the Waitara catchment. The settling pond is not described.

Kayaking and rafting

- The Waitara River is the only referenced kayaking option in the Waitara catchment in the single contemporary published kayak guide, describing it as a great trip for novices “where most Taranaki boaters get their first taste of fear and whitewater”. The recommended get-in for the Waitara run is on the Manganui River approximately 20km downstream of the diversion weir. The run is described as dependent on recent rainfall.
- Earlier guidebooks reference both the Waitara and Manganui Rivers as excellent whitewater trips, but both depending on recent rainfall. The preferred run is the same as above, although a ‘high level put-in’ is recommended upstream of Everett Park on the Manganui River approximately 11km downstream of the diversion weir. The Manganui River upstream of the diversion is described as ‘marginally canoeable’.

Swimming

- There are no published data to show the scale and location of swimming in Taranaki. Bathing water quality on the Manganui River is monitored at Everett Park (15km downstream from the weir diversion) and the Waitara River near the coast. TRC ranked monitored sites by relative water quality standards for contact recreation for the region in 2019, placing Lake Ratapiko and the Manganui River at Everett Park first equal, and the Waitara River at the town wharf 9th (out of 16 waterbodies).

Jet boating and power boating

- In the Taranaki Region, uplifts of speed limits on waterways to allow jet boating are limited to the Awakino, Mangaehu, Mokau, Patea, Tongaporutu and Waitara Rivers. The Waitara River is described by Jet Boating NZ as accessible ‘only in flood’ above the Manganui confluence.
- Trustpower owns the bed of Lake Ratapiko and the land immediately around it. Boating on Lake Ratapiko is administered by Jet Boating NZ on its eastern arm and the New Plymouth Water Ski Club on the western arm. The western arm is open only to Club members or by agreement with the Club, while the eastern arm is open to the public unless required for exclusive use by Jet Boating NZ.

- Activity on Lake Ratapiko is managed according to the Lake Ratapiko Recreational Users Policy which was drafted by Powerco Ltd in 1996. The Policy does not bind Trustpower to maintaining specific water levels. Rules arising from the Policy are indicated on signs at the Lake and are enforced by Jet Boating NZ and the Water Ski Club, although Maritime Rules established by Maritime NZ also apply (TRC has no regional navigation safety bylaws applying to the Lake). Trustpower has ultimate responsibility for permitting recreational use of the Lake.
- Onshore facilities at Lake Ratapiko are managed by the clubs and include toilets, clubrooms, a camping area (for New Plymouth Water Ski Club members), boat ramps, play and picnic facilities and berthage for boats in the western arm.

Whitebaiting

- The 2016 TRC report *Freshwater bodies of outstanding or significant value in the Taranaki region - Review of the Regional Fresh Water Plan for Taranaki* identifies the Waitara River as one of 20 rivers and streams in the Region considered to be regionally significant for whitebaiting. Activity occurs near the coast.

Hunting

- There is little literature about hunting in the study area. Lake Ratapiko is closed to boating for the hunting season (4 May to 30 June in 2019), as well as two weeks before opening day and one week after closing day.

No recreation values were identified for the Mako Stream.

5 Interview summaries

A selection of recreational users were interviewed or contacted via email to gain an understanding of users' perceptions of the quality and nature of the recreational experience of the Manganui River, Waitara River, Lake Ratapiko, and adjacent recreation settings, and the perceived effect of the Motukawa HEP Scheme on their experience. Full interview summaries are provided in Appendix 1 (not all wished to be quoted). Key findings are:

- Both the New Plymouth Water Ski Club and Jet Boating NZ have excellent relationships with Trustpower for the management of water levels at Lake Ratapiko and for the provision and maintenance of terrestrial facilities at the Lake. Both clubs report easy communication with generation managers and their willingness to maintain appropriate water levels at short notice for special events, and as a matter of routine during the Christmas season, weekends and public holidays. Financial support from Trustpower for facility maintenance is also appreciated.
- Lake Ratapiko is a regionally significant recreation setting. The eastern arm is highly popular for boating, swimming and towing people on biscuits and kneeboards. Being open to the public at most times, the eastern arm can get crowded. The western arm is described as fundamental to water skiing in Taranaki and one of the best venues nationally, considering the ability of spectators to view the entire water ski course. Both clubs have good relationships with neighbouring land owners.
- There are no water quality issues reported in Lake Ratapiko, although it can get discoloured after heavy rain, but this has not been an issue.
- Aquatic weeds on the Lake edge have been an issue in some years. Trustpower has raised lake levels by request of Jet Boating NZ to reduce the chance of weeds being sucked into motor intakes during events. The New Plymouth Water Ski Club has occasionally opted for manual weed removal around their facilities. Recent years have had relatively little weed growth.
- Lake Ratapiko has been stocked with rainbow trout, by Taranaki Fish & Game and there are also perch, but it has poor habitat. Dropping lake levels for weed control reduces habitat for trout. It works well as a fishery for kids especially.
- Chemical treatment of weeds in Lake Ratapiko is preferred by Fish & Game to reduce the need to lower the Lake, thereby maintaining habitat for trout and perch, and avoiding impacts on hunting if lowering occurs before the opening of the season (1st of May).
- Angling occurs at the settling pond and in the water race, although there is no public access, and angling is discouraged by Trustpower (who owns the land underlying the pond and race).
- Most angling effort on the Manganui River is upstream of the diversion weir (which appears to be functioning well, but needs monitoring). The upper Manganui has significant fishing resource with high natural values. The Mako and Makara Streams are not fishing sites.
- Preferred flows in the Manganui River below the weir diversion for trout need to be balanced between providing trout passage and maintaining habitat. High summer temperatures led to trout deaths in January 2018. The Manganui River is generally difficult to access for fishing.
- Kayaking on the Manganui River generally begins around Everett Park, well below the weir diversion, and interviewees had not experienced the River above this point. Flow preferences for the Manganui River at Everett Park are for flows of between 25 and 70m^3/s and a minimum around 20m^3/s. 18m^3/s is possible but is very bony.
- In-flows to the Waitara River from the Power Station discharge are evident on TRC's online flow monitoring records (as flow peaks on flow charts) but have no effect on the ability to jet boat or kayak the River. The Waitara River below the Manganui confluence is its most popular reach.

6 Effects of operation of the Motukawa HEP Scheme

The NPSFM came into effect on 3 September 2020 and replaced the National Policy Statement for Freshwater Management 2014 (amended 2017). The sole objective of the NPSFM is to ensure that natural and physical resources are managed in a way that prioritises the health and well-being of water bodies and freshwater ecosystems. Accompanying this objective are policies which seek to ensure that the loss of river extent and values is avoided to the extent practicable (Policy 7) and that the loss of river extent and values is avoided, unless the relevant council is satisfied:

- That there is a functional need for the activity in that location; and
- The effects of the activity are managed by applying the effects management hierarchy (Clause 3.24).

The effects management hierarchy requires a broad consideration of what is 'practicable' in the context of avoiding, minimising and remedying potential adverse effects on river extent and values. What is 'practicable' in this context is discussed in the AEE, which requires consideration of matters beyond those relating to recreation. Loss of value is defined as meaning a river is less able to provide for among other things the existing or potential amenity values. As such, Trustpower has undertaken workshops with its technical advisors and engineers to work through the effects management hierarchy as it relates to the potential effects of the continued operation of the Motukawa HEPS on the extent and values of affected river systems (e.g. the Manganui River and Mako Stream). The results of these workshops as they relate to recreation are documented in the AEE, and the relevant conclusions are documented in this section of this assessment.

This section considers both the current and proposed operation of the Motukawa Scheme.

6.1 Effects on recreationally taken fish species

The Scheme has the potential to affect habitat for trout and trout fishing in the reach downstream of the Manganui weir, and to have effects on whitebait species resulting from the diversion of water to the Motukawa Race and their detention in Lake Ratapiko. Fishing is associated with Māori freshwater values, particularly the availability of mahinga kai.

Due to poor access, there is little angling for trout in the Manganui River immediately downstream of the Manganui weir. However, habitat effects in this reach may result in changes to fish populations upstream of the weir – which is a relatively popular angling destination – and on native fish species generally. High water temperatures mean trout cease feeding and cannot be caught, or relocate to other parts of the catchment. Goldsmith & Ryder (2021) find that, during summer, water temperatures in the Manganui River downstream of the intake are generally higher than upstream, and can exceed thermal criteria for brown trout, but are typically in the range preferred by native fish (such as whitebait species). Accordingly Goldsmith & Ryder recommend (in accordance with the NPSFM effects management hierarchy) the implementation of the following measures:

- The maintenance of the existing fish pass at the Manganui weir;
- Augmenting flows below the weir when water temperatures in the downstream reach exceed 25ºC and when the additional flow will reduce that temperature (water in the river upstream of the weir can be equally warm), also reducing the risk of nuisance periphyton growths; and
- Trap and transfer systems for migrating fish.

Goldsmith & Ryder note that changes in water temperature and other water quality factors resulting from the discharge of the Motukawa Power Station into the Makara Stream and Waitara River remain within acceptable ranges, with no more than minor effects on fish species.

These methods are considered to be able to minimise and remedy effects on fish populations to the point where they are no more than minor, and apply to the current and proposed operation of the

Scheme. Managing water temperature in the Manganui River downstream of the weir will maintain the ability to catch trout, considering that high water temperatures will also occur naturally.

6.2 Effects on kayaking and rafting

The get-in points on the Manganui River for kayakers and rafters are 11km and 20km downstream of the Manganui weir. Interviews indicate that the operation of the Scheme has no observable effect on kayaking amenity and literature does not reference the Scheme as a consideration, particularly considering that kayaking opportunities generally rely on rainfall events to provide adequate water, at flows between 20 and 70m^3/s, and the Scheme has been operating for many years.[1]

The location of a weir on a river used for kayaking would normally be identified as a hazard. A sign upstream of the weir warning kayakers of its presence could be installed, but this would rarely be read, and kayakers in this reach would be wary of any impediments considering its low level of use.

The scheme augments flows in the Waitara River and does not present an adverse effect there.

Effects of the existing operation of the Scheme on kayaking, rafting and jet boating are less than minor due to: the scale of effects of the diversion from the Manganui River and discharge to the Makara Stream; the separation between the weir and the get-in for kayaking and rafting; and the reliance of kayaking and rafting on flows above 20m^3/s. The existing take of 5,2m^3/s occurs when inflows to the Manganui Weir are greater than 5.7 m^3/s. This flow condition occurs for 32% of the time on average. The estimated corresponding flow at Everett Park, prior to the take having effect, is estimated to be approximately 19.7 m^3/s. At this flow, on average, the loss compared with the natural flow is predicted to be approximately 4.3 m^3/s, and would take between 3 and 4 hours to propagate to Everett Park. This means, at the lowest relevant flow, a potential change of flow at Everett Park from 19.7 m^3/s to 15.4 m^3/s, The duration of effect on the reduction of 'kayakable' flows above 20m^3/s is 8% corresponding with current flows at Everett Park of 15.7m^3/s (30.7% exceedance) and 20m^3/s (22.8% exceedance). The existing Scheme operation appears to represent an accepted status quo and is not considered by interviewees to have adverse effects on white water activities.

The proposed additional take has the potential to modify flows at Everett Park by further reducing flow. The additional take of 2.3m^3/s would normally occur when inflows to the Manganui weir are greater than 8.1m^3/s. This flow condition occurs for 19% of the time on average. The corresponding flow at Everett Park, prior to the additional take having effect, is estimated to be approximately 23m^3/s. At this flow, on average, the loss compared with the status quo is predicted to be approximately 1.6m^3/s, and would take between 3 and 4 hours to propagate to Everett Park. This means, at the lowest relevant flow, a potential change of flow at Everett Park from 23m^3/s to 21.4m^3/s, which would remain within the kayakable range. The stage height measurement would reduce by approximately 34mm due to the additional proposed take at these flows.[2]

The closure of the Motukawa Race intake gates, due to operational requirements of the scheme (such as high inflows to an already full Lake Ratapiko), would result in a potential unexpected increase of flow at Everett Park. In the worst case scenario, with gates closing at the lowest possible flow of 8.1m^3/s measured at the weir, the flow at Everett Park could increase by 7m^3/s with a corresponding stage height gain of approximately 140mm. However, this would propagate slowly and would amount to a maximum ramp rate of about 50mm/hr, and take 3 to 4 hours to fully take effect at Everett Park. Gate closures would normally occur at much higher flows, and the relative scale of change would correspondingly reduce. Kayakers and rafters also follow water down the river and so would not experience this flow change, which relates to a static point.[3]

[1] The mean flow on the Manganui River at the intake weir is 6.86m3/s, and 19.0m3/s at Everett Park (Leong 2021, Table 2.13).
[2] David Leong, Tonkin & Taylor, pers. comm.
[3] Ibid. In a river reach with a flat gradient and deep flows, the wave celerity (the speed of movement of the wave) is much higher than the water velocity, which means the "wave" from a perturbation such as gate closure can actually overtake a

In summary, adverse effects on kayaking and rafting are avoided.

6.3 Effects on contact recreation

Water quality in Lake Ratapiko and at Everett Park on the Manganui River have been assessed by the TRC as suitable for contact recreation (see Section 4 and Appendix 1).

As discussed for kayaking and rafting, flow effects of the Scheme on water levels at Everett Park are moderated by the distance between the intake weir and the scale of the take (existing and proposed). And as for kayaking and rafting, adverse effects on swimming are avoided and are less than minor.

6.4 Effects on jet boating on the Waitara River

Interviewees indicate no effect on jet boating as a result of the operation of the Scheme. Although the operation of the Scheme is apparent in the river flow charts provided online by the TRC for the Tarata measurement site (Figure 5), interviews indicate this has no material effect on jet boating, and are also not apparent on the Manganui River at Bertrand Road (Figure 6).[4]

The proposed increased take does not change the capacity of the Motukawa Power Station to discharge water and so has no effect on the existing scale of change in flows on the Waitara River, with only minor changes in the period and duration.

Effects on jet boating are avoided.

Figure 5: TRC flow hydrograph for Waitara River at Tarata, 4 days in March 2021

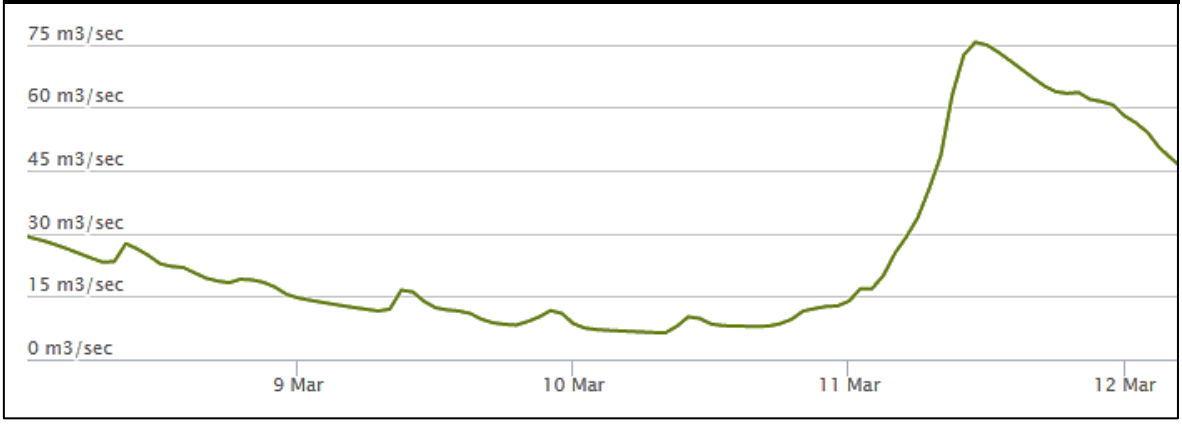
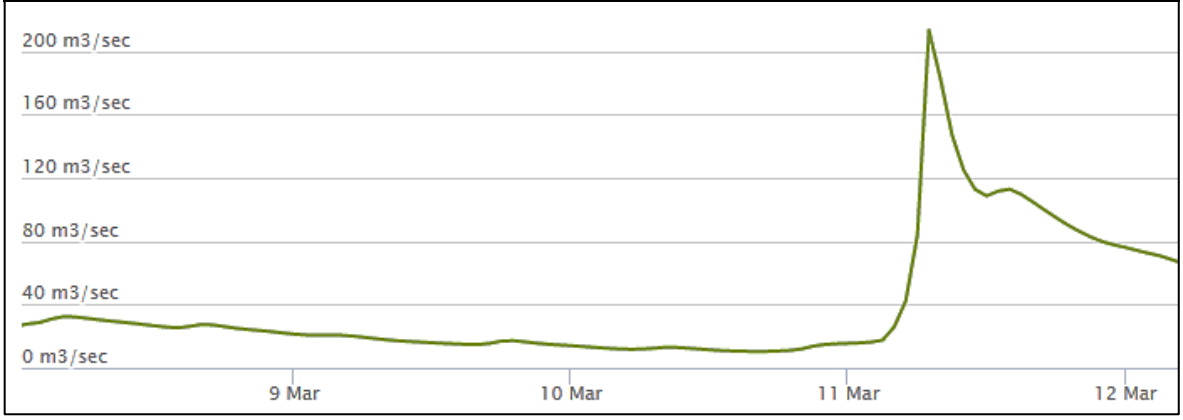


Figure 6: TRC flow hydrograph for Waitara River at Bertrand Road, 4 days in March 2021



watercraft floating down the river. However, in the case of the Manganui River where there is a high gradient and shallow flows, this does not apply.

[4] https://trc.govt.nz/environment/maps-and-data/regional-overview/?measureID=7&siteID=13

6.5 Effects on hunting

Waterfowl hunting on Lake Ratapiko is identified as a benefit of the operation of the Scheme. The operation of Lake Ratapiko will remain largely consistent and no changes to the hunting resource are anticipated.

6.6 Operation of Lake Ratapiko

The formation and operation of Lake Ratapiko affords significant regional benefits to recreation via the provision of opportunities for swimming, water skiing, jet boating, fishing, hunting and other water-based recreation activities. Although the primary driver for Lake operations is clearly hydro generation, the water level in the Lake has been maintained at high levels over summer, particularly weekends and public holidays, to facilitate recreation. Appendix 3 includes hydrographs for the Lake from 2016 to 2020 showing more aggressive generation patterns over winter and stable summer levels. There are no plans to modify this management approach for the Lake.

The proposed increased take is modelled to have the potential to marginally increase the operating range of Lake Ratapiko over summer (and all year) (Leong 2021), but changes are slight and in reality will depend on the chosen daily operating regime, which is not expected to change, with recreation amenity maintained over summer with a focus on weekends and public holidays, and ongoing communication with boating clubs.

Goldsmith & Ryder (2021) recommend the maintenance of existing consent conditions which limit the rate of draw-down of the Lake for autumn maintenance to limit adverse effects on aquatic communities.

Periodic dredging maintains water depth for water skiing in the western arm of the Lake (although the purpose of this dredging is to maintain generation capacity), and occurs outside the recreation season.

7 Conclusion

The Scheme as it is currently operated reduces flows in the Manganui River downstream of the intake weir and increases flows in the Waitara River downstream of the confluence of the Makara Stream.

The Manganui River's recreation values lie predominantly in the River upstream of the intake weir (angling) and at and downstream of Everett Park (swimming, kayaking and rafting). Whitebaiting also occurs in the lower Waitara River and is potentially affected by the operation of the Scheme on the Manganui River. The recreation values of the upper River are maintained by providing fish passage and the maintenance of habitat in the residual reach via a minimum flow regime and recommended flushing flows, which also sustain native fish species (such as whitebait). At Everett Park, preferred flows for kayaking and rafting exceed levels at which the proposed additional water take has any meaningful effect, and the existing Scheme operation appears to represent an accepted status quo and is not considered to have adverse effects on white water activities.

Lake Ratapiko is a significant regional recreation setting and is a benefit that has resulted from the creation and operation of the Scheme. There are no proposals to alter the management regime of the Lake. The proposed additional take, while marginally increasing the Lake's operating potential, does not alter the intent to sustain recreation amenity by providing high lake levels over the extended summer period, particularly weekends and public holidays. Dredging operations occur outside periods of recreational activity on the Lake, and benefit recreation by maintaining water depth.

Water quality measures for contact recreation are consistently good at Everett Park and in Lake Ratapiko.

There are no recreation values in the Makara Stream. Effects in the Waitara River, and the jet boating resource there, is evident only in the generation pattern seen in the hydrographs for the River. There are no adverse effects associated with the discharge of water from the Motukawa Power Station, and no potential for additional effects associated with the discharge as a result of the proposed additional take (because the Motukawa Power Station will retain the same discharge capacity). Effects of the current and proposed operation of the Scheme on recreation are minor or less than minor in the Waitara River, including downstream of its confluence with the Manganui River.

The operation of the Scheme – currently and as proposed – avoids adverse effects on recreation has no more than minor adverse effects on recreation amenity in the catchments of the Manganui and Waitara Rivers, and offers a significant benefit at the regional level for recreation via the creation and operation of Lake Ratapiko.

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Appendix 1: Literature Review

Trout fishing

The Taranaki Fish & Game Region, with – according to the Fish & Game Council's periodic national angler survey (Unwin 2016) – 9,010 angler days in the 2014/15 season – and 0.7% of the national total – has the lowest level of angling activity nationally after Northland (with 1,600 angler days). By comparison, the Taupo Conservancy featured 127,700 angler days and 10% of the national angler effort in 2014/15. Taranaki also had the second lowest estimated level of angling by overseas visitors at 170 angler days, compared with 60 in Northland.

Angling effort in the Taranaki Region tends to be thinly dispersed over approximately 50 waterbodies, with, for the 2014/15 season, only three surpassing 1,000 angler days individually: the Manganui-o-te-ao River (at 1,230 angler days in 2014/15); the Waiwhakaiho River (1,210 angler days) and Lake Mangamahoe (1,210 angler days). The Waitara catchment, including Lake Ratapiko with 80 angler days and the Manganui River with 310 angler days, contributed 6% all angler days across the Region (Unwin 2016).

Angling effort in the Waitara catchment was much higher in the 2007/08 season compared with 2014/15, at 1,710 angler days, but previously measured seasons were more similar at 760 angler days in 2001/02 and 410 in 1994/95. Lake Ratapiko and the Manganui River contributed most of the variability with, for Lake Ratapiko, 650 angler days in 2007/08 and 340 in 2001/02, and none in 1994/95; and for the Manganui River 600 angler days in 2007/08, 150 in 2001/02, and 160 in 1994/95. The Waitara River featured consistently low counts, with 30 angler days in 2014/15, 120 angler days in 2007/08, 10 in 2001/02, and 20 in 1994/95 (Unwin 2016 & 2009). Teirney *et al* (1984), in the first series of national angler surveys, reported 503 angling 'visits' (same as an angler day) for the 1980/81 season, making it the second-most popular river in the equivalent, at the time, of the Taranaki Fish & Game Region (lakes were not surveyed at the time and only fishing licence holders in Taranaki were surveyed).

Angling activity in the Waitara catchment is reasonably evenly spread over October to March, with some activity on April.

Unwin (2013) is a survey of relative national angling river values based on an update of the survey methodology used in the national angler surveys of the 1979/81 season (Richardson *et al* 1984, for example) and a pilot survey undertaken in the Otago and Nelson/Marlborough F&G regions (Unwin 2009). The survey was distributed online to a random sample of 11,923 whole-season and family licence holders for the 2011/2012 angling season. Parallel telephone surveys on non-respondents in the Southland, Wellington, and Hawkes Bay regions were completed to test for sample bias.[5]

Respondents were asked to identify rivers they had fished over the last 3-5 years, to rate their enjoyment of the fishery on a scale from 1 (least enjoyable) to 5 (most enjoyable), and to identify up to three reasons, from a list of ten, why they fished each river. These were: Close to home, Close to holiday home, Easy access to river, Plenty of fishable water, Scenic beauty, Wilderness feeling, Angling challenge, Expect good catch rate, Chance to catch trophy fish, Other (including a brief description). No lakes were considered in the study.

Summary scores for enjoyment level, and for nine of the ten reasons why respondents fished each river (excluding "Other"), were generated for all rivers. The enjoyment level was calculated as the numerical average of the individual 1-5 ratings. Scores for each reason (or attribute) were generated

[5] Unwin (2013) reported: "Online respondents were more active than telephone respondents, fishing more rivers (11.9 vs. 4.2 rivers per respondent, respectively), in more regions (2.4 vs. 1.5 regions per respondent, respectively), but were more conservative when ranking rivers according to their level of enjoyment. A likely explanation is that respondents who took the effort to respond to the online survey, who represent only 14.9% of the recipients, were more committed anglers than telephone respondents, who represented 71% - 92% of those interviewed. The pooled online responses therefore provide comparative data on New Zealand rivers as assessed by a large pool (1,650) of experienced river anglers, akin to the views of an expert panel."

by expressing the number of respondents who had nominated that reason as a fraction of the total number of respondents who had fished each river, yielding an attribute score from 0-1

Only rivers which were used by at least ten respondents were analysed, and only thirteen rivers in Taranaki were identified as popular by this approach, including the Manganui River with 22 respondents, but not the Waitara River.

The Manganui River was ranked (out of 13 popular rivers in Taranaki):

- 8th for level of use,
- 4th for enjoyment,
- 7th for close to home,
- 4th for close to holiday home,
- 10th equal for ease of access,
- 3rd equal for area fishable,
- 5th equal for scenic beauty,
- 3rd equal for wilderness feeling,
- 5th for angling challenge,
- 8th equal for anticipated catch rate,
- 4th equal for anticipate large fish.

Table 1 shows these data as their individual measure and compares them with the means for all Taranaki and New Zealand rivers. The Manganui River stands out for its value as a river 'close to home' (which is relatively high for all Taranaki rivers) with a relatively poor catch rate but relatively high angling challenge.

Table 1: Values of New Zealand angling rivers - Taranaki. Source: Unwin (2013).	**Total responses**	**Mean Enjoyment Score**	**Close to home**	**Close to holiday home**	**Ease of access**	**Area of fishable water**	**Scenic beauty**	**Wilderness feeling**	**Angling challenge**	**Anticipate good catch rate**	**Anticipate large fish**	**Other**
Manganui River	22	2.55	64%	9%	23%	41%	27%	23%	41%	9%	5%	9%
Mean all Taranaki rivers	26	2.42	54%	7%	35%	32%	26%	16%	34%	17%	3%	8%
Mean (all NZ rivers)	41	2.38	27%	10%	33%	29%	32%	25%	32%	16%	8%	4%

Fish & Game Taranaki briefly describes fishing in the region on its website:[6]

> *Most Taranaki trout fisheries have their source within the Egmont or Tongariro National Parks and provide a high-quality angling experience in a scenic and un-crowded environment.*
>
> *Even the most popular Taranaki fisheries have a low level of angling use by national standards.*
>
> *More than 40 small to medium sized trout streams radiate from the base of Mt Taranaki.*
>
> *These rivers and streams can provide quality 'sight fishing' opportunities for brown trout, which while often not present in great numbers may be of large size.*

[6] https://fishandgame.org.nz/taranaki/freshwater-fishing-in-new-zealand/

However, with only limited numbers of large trout which are often quite old, some of these fisheries cannot stand 'excessive' pressure.

This is why we haven't listed details for many of these streams in the following information.

Nevertheless, for those anglers prepared to explore, there are some very special opportunities hidden away with the added bonus of the peace and solitude that comes with fishing these streams.

Angling advice specific to the Lower Waitara River includes:[7]

The Waitara River, one of Taranaki's largest, drains an extensive area of the Taranaki eastern hill country and often carries a high silt load.

However the lower reaches downstream of the Manganui River confluence clear during low flow periods and can provide good fishing for brown trout, particularly in spring before the water gets too warm.

Owing to the size of the river and its turbidity, spin fishing is the most productive method.

The lower river can be accessed through farmland off Mamaku, Spargo and Manganui roads (permission required).

And for the Manganui River:[8]

One of the larger ringplain rivers, the Manganui receives water from several tributaries on the eastern side of Mt Taranaki and holds moderate numbers of brown trout up to 2.5 kg.

In its middle reaches, a weir diverts much of the Manganui's flow into the Motukawa hydro scheme and Lake Ratapiko, although a fish pass and downstream residual flow has now restored the migratory pathway along the river after a break of 75 years.

The lower Manganui River can be fished from Everett Park (two entrances), Bristol and Tarata Roads, the middle and upper reaches from Tariki, Croydon and Manganui Roads and SH3.

There is public access at Everett Park, but all other access points require landowner permission.

Nymphing (both blind and to sighted fish) and bait fishing with creeper and worm are favoured, although spin fishing in the river downstream of Tarata Road can also be productive.

The river downstream of Bristol Road Bridge is open to angling all year-round.

Lake Ratapiko is also described:

This shallow 21-hectare hydro reservoir is located nine kilometres down Tariki Road, which turns off SH3 midway between Inglewood and Stratford.

Good populations of hatchery rainbows, wild brown trout and perch are present.

Lure anglers often favour small veltic and toby spinners here, while nymph and wetfly fishing are also effective.

Lake Ratapiko is a great place to take youngsters bait fishing for perch.

The water ski and power boat club areas off Tariki Road provide good access to the lake margin.

Permission to fish from other areas should be obtained from the appropriate landowner.

[7] https://fishandgame.org.nz/taranaki/freshwater-fishing-in-new-zealand/fishing-locations-and-access/taranaki-ringplan/
[8] ibid

The lake is closed to fishing for the month of May each year for duck hunting.

Kent (2006) describes the Manganui River, but not – at least directly – the Waitara or Lake Ratapiko, in his comprehensive angling guide to the North Island:

Although the water is peat stained, making sight-fishing difficult, there is good brown trout fishing in this river and its tributaries. There are some very deep holes which yield some large fish to well sunk nymphs or creepers, especially early in the season. The banks are for the most part stable, as bush clearance has not been total. Fish stocks are reasonable and the river can be crossed between pools.

Tributaries worth exploring include the Waipuku Stream, which joins the main river 3 km upstream from the Tariki Road bridge the Maketawa, 8 km south of Inglewood, and the Ngatoro, 4 km south of Inglewood. Both the latter tributaries are crossed by SH 3 although the Maketawa Stream can also be accessed from Junction and Upper and Lower Norfolk roads. The Maketawa Stream offers some interesting sight-fishing for wary browns.

It would take years to fish all the other small streams and tributaries flowing from Mt Taranaki that hold brown trout. The countryside is attractive and in clear weather views of the mountain are quite spectacular. A number of small lakes and dams in the district also hold trout and perch but these are not recommended as worthwhile fisheries.

There is no published reference to angling on the settling pond.

Kayaking and rafting

The 5th edition of *New Zealand Whitewater: 180 Great Kayaking Runs* (Charles 2013) - the only published current popular guide for kayaking – describes only the Waitara River (although the described get-in is on the Manganui River):

The Waitara, or literally 'water from a peak' is one of Taranaki's favourite novice/intermediate trips. I'm not sure how it gets this name because its headwaters are well north of the mountain.

This is a great trip for novices and the place where most Taranaki boaters get their first taste of fear and whitewater. A dozen or so bouldery rapids spread between long flat pools make up the trip. These rapids may push into Class III in very high water, but generally are a comfortable home for Class II boaters.[9]

TO GET TO THE PUT IN: Immediately west of the small settlement of Waitara is Waitara Rd which joins SH3 about 15km east of New Plymouth. Follow Waitara Rd for about 8km to the junction with Everett Rd. Turn onto Everett Rd and follow this for just over 2km. Near Roddy Rd look for a large rock and a stile (steps over a fence). Park here and walk down to the river. It is necessary to phone the farmer before crossing the land.

TO GET TO THE TAKE OUT: Bertrand Rd meets Waipara Rd about 3km before the Everett Rd turnoff. The bridge is about 1 km along Bertrand Rd. The take out is on the left side under the bridge.

CLASS: II+

LEVEL: Optimal is 2.7m. Above 3.0m the river tends to wash out.

LENGTH: 10km

GRADIENT: 4m/km

[9] The river classes in Charles (2013) are: Class I – moving water with a few riffles and small waves. No obstructions. Class II – Easy rapids with waves up to one meter. Clear channels obvious without scouting. The ability to move your craft across the current is not necessary. Class III – rapids with high irregular waves and narrow passages. The ability to spin and manoeuvre is necessary. Class IV – Difficult rapids requiring a series of controlled moves, cross-current and spinning in confused water. Scouting often necessary and a reliable roll is mandatory.

TIME: 2-3hrs

CHARACTER: Fun bouldery rapids.

HOT TIP: Wait for the water.

Egarr (1989) in an earlier and more comprehensive kayaking guide describes kayaking options on the Waitara River in more detail, as well as the Manganui River, with a map (Figure 7):

The Waitara rises in the North Taranaki hill country and flows southwest to pick up tributaries flowing off Mount Taranaki. Then it turns to the northwest to enter the Tasman Sea at Waitara. The Waitara is navigable by canoe for 110km through the hill country, but only on the 25km where the river is turned by the lava flows of Mount Taranaki do rapids exist. These are bouldery rapids, and reach grade III.[10] *Of the rivers flowing off Taranaki, the Manganui is the largest. It offers an excellent whitewater trip.*

Both the Waitara and Manganui Rivers are best after rain, and as these two rivers have different responses to rainfall, knowing these characteristics can provide you with a sequence of excellent trips. The Manganui, with its high gradient off the mountain, has a very rapid discharge. This means that if rain is general to the north of Taranaki, the section of rapids on the Waitara below the Manganui confluence are the first to reach their peak as the Manganui discharges into the river. If the rain is short-lived, the river will drop quickly but rise again as the water from the upper Waitara catchment reaches these rapids. If the rain is of a longer period, you will encounter a rapid rise, a plateau where flow levels hold, then a secondary rise when water from upstream floods into the lower river.

Flow levels are available from an automatic telephone connection, ph. Waitara (067) 20613. The normal range of river depth is from 1.6m to 1.8m. The lowest level for a paddle trip is 1.6m (15 cumecs), while the ideal flow for kayak and raft trips is considered to be 2.6m (100 cumecs). These are near flood conditions, when rapids reach grade III+, almost grade IV.

Upper Waitara River *The Waitara can be run from the bridge at Moki, where the river is a mere 3m across. From this point down to Purangi, the river is of low gradient and without rapids, but with occasional log jams and snags. The river rapidly increases in size and the banks get higher. Flooding can occur rapidly, and it is necessary to watch the weather. Very rough roads meet the river at a number of places; Maikaikatea Road is 20km downstream from Moki, Ngatoto Road is 13km further downstream, and then it is 22km to the Purangi Bridge. The trip from Moki to Purangi will take a full day under normal flow conditions.*

From Purangi to Tarata is another full day on the river (8 hours with normal flows, 3 hours when in flood), similar to the upper section but with a more rural atmosphere. Shingle rapids of no more than grade I begin to appear in the last 7km before Tarata, but otherwise the river is without rapids.

Waitara white water *The whitewater section of the Waitara lies in the lower part of the run from Tarata to the sea. The normal take-out is at the bridge on Bertrand Road 6km upstream of Waitara. There are a number of alternative put-ins for this section of the river. The first one is at Tarata, which involves considerable flat water before reaching the rapids. Secondly, you can launch into the Manganui off Everett Road (this will miss one rapid in the Waitara above the Manganui confluence, although it is possible to portage up the right bank lo run the rapid, as it lies immediately above the confluence. lastly, by prior arrangement with farmers you could portage to the river over farmland off the end of Te Arei Road. Here you would miss two very good rapids. The preference seems to be the Manganui/Waitara trip.*

[10] The river grades in Egarr (1989) are: Grade I - flat water, but can be fast-moving. Grade II - waves breaking white but without obstacles, so does not require any degree of boat handling skills. Grade III - requires precise boat handling. Generally technical boating with obstacles being either rocks, logs or stopper waves. Most paddlers will wish to inspect a grade III rapid before they run it, unless they know the river from previous trips. Grade IV: Big water, holes and hydraulics with a swim likely. The route through the rapid will be complex and prior inspection will be required.

From Tarata, the river continues the same as the upper section, with some shingle shallows. 5km above the Manganui confluence (20km below Tarata) the shingle rapids become steeper, the current quickens and larger rocks begin to appear. The need for manoeuvring increases until the rapid immediately above the confluence of the Manganui, which is extremely tight, steep and bouldery; grade Ill with above normal flows. The next 9km has a series of rapids, mostly tight bouldery ones that reach grade III with high flows. There are about ten such rapids. The last of these difficult ones is near the bluffs of Pukerangiora (a good vantage point for spectators and shuttle vehicle drivers). From Pukerangiora there are two more minor rapids before the takeout at Bertrand Road Bridge. Where the methanol plant takes water from the river, there is a large rock that can throw up a big wave which has become a much used play-hole for kayakers. The take-out access is beneath the bridge on the left bank. (The bridge is now closed to vehicular traffic.)

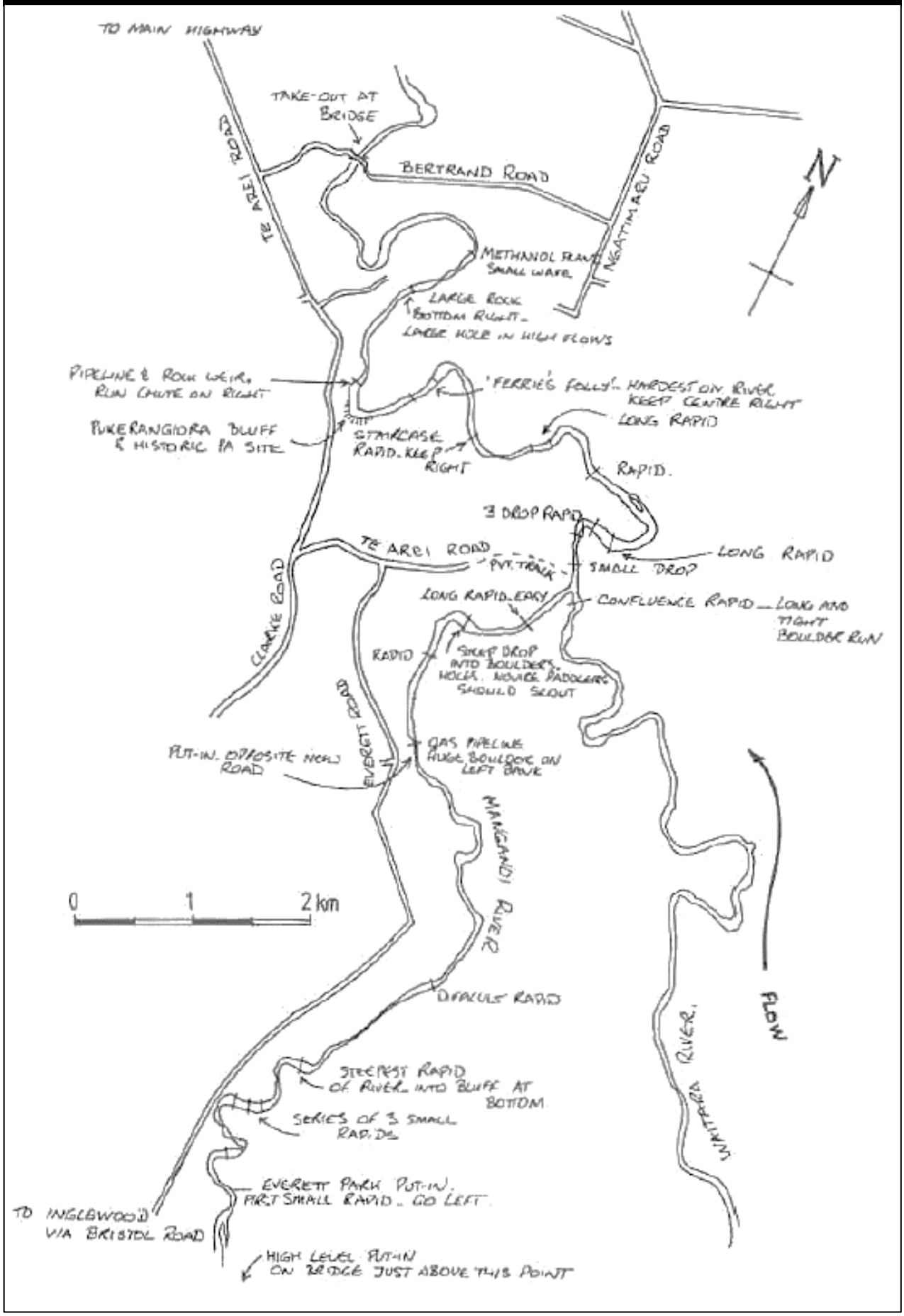
Below Bertrand Road the river has first a number of easy rapids, then becomes flat and tidal from the end of Mamaku Road, which can be used as the take-out on the left bank. The river is a trifle polluted below the town bridge and meatworks, and I suggest you take out before this.

***Manganui River.** The Manganui River is the main tributary of the Waitara, and has its source on the east side of Mount Taranaki (the Manganui ski field). As a consequence, the river is best in spring after heavy rain, when snow-melt boosts the level. The river rises and falls very quickly with rain. The Manganui has a bed of large round stones that create very tight rock-garden type rapids, the stones becoming larger lower down. The river is marginally canoeable from Midhirst after the Te Popo Stream joins it, but there is a small dam from which water is drawn off at Tariki Road. The most commonly used put-in is at Everett Park. An alternative put-in if the river is low and you want access to the Waitara lies downstream off Everett Road before it joins Te Arei Road. Take out at Bertrand Road on the Waitara River.*

The rapids are very tight and bouldery, the hardest being a good grade III on a hard right-hand behind a short distance up from the Waitara confluence. This particular rapid is a steep drop onto boulders and the main route glances off a large boulder at the bottom. Novice paddlers should scout this rapid.

Egarr (1989) describes the Waitara and Manganui Rivers (Evertt Park to Bertrand Road) as one of 42 ‘best river trips’ in the North Island, and one of three in Taranaki, along with the Mokau River (Totoro Gorge) and the Waiwhakaiho River. He also includes the Waitara/Manganui in his list of 10 of ‘the very best of the difficult whitewater trips’ in the North Island, of grades II to V.

Figure 7: Waitara and Manganui kayaking map, Egarr (1989)



Egarr & Egarr (1981) is now quite dated, but represents the most comprehensive review of all river recreation throughout New Zealand, and the capacity of specific rivers for various activities – noting that since 1981 recreation craft have evolved significantly – from cumbersome fibreglass kayaks to light and nimble plastic, and mini jet boats which can navigate relatively small creeks. The assessment also predates the new fish pass and minimum flow on the Manganui River. Egarr & Egarr described recreation use of the Manganui River, and the Waitara River below Purangi in three sections:

Manganui River

Motor launches, Jet boats, Drift boats: Too small and the rapids are too severe for boating.

Rafts: The lower Manganui River, from Everett Park, provides excellent water for small rafts. There is a good current and numerous rapids.

Canoes/kayaks: The lower 28km have been canoed when the river is running high, but the river is seldom canoed above Junction Road. Below Junction Road, there are 13km of good, Grade 3 canoeing water. The rapids are continuous, steep and rocky. There are numerous quiet pools.

Pack floating: Excellent water from Everett Park, giving 10km of good, crystal-clear water and continuous white water.

Swimming: Everett Park is a very popular swimming pool and there are numerous other pools downstream. Many of the tributary streams such as the Te Popo have good swimming holes too, and the rivers are used to a great extent for Ii-lo floating.

Scenic description: From Mount Egmont, the Manganui River falls steeply, often over large water falls (Curtis Falls, for instance), but the river is too shallow, steep and rocky for recreation in this area. Once the gradient begins to run out towards Midhirst, the river slows up and becomes usable for recreation. For the most part, the river flows between stony banks through farmland with a patch of native bush known as Everett Park. This is a very scenic area. The river is valued more for its clear water and excellent rapids rather than for its scenery. There is one small dam on the upper river which diverts water to the man-made Lake Ratapiko which is used for power boat racing and water-skiing. The river is often dry for a short distance below the dam.

Recreation value: High

Waitara River - Purangi to Tarata

Motor launches: Small power boats may be able to use parts of this river section although numerous shallows and log snags just above Tarata may impede navigation.

Jet boats: There is a launching ramp (privately-owned) at Tarata that is used by the Jet Boat Association members. The whole 39km of this river section receives a lot of use by jet boats. The water is considered easy Grade 2.

Drift boats, Rafts, Canoes/kayaks: This section of river is considered to be less interesting than the upper section because of the more open country and the scrub. The river itself remains much the same. There are few rapids, and many logs need to be avoided. The current flows gently except when it is running high, then it can become very powerful.

Pack floating: Unused.

Swimming: Some swimming at Tarata, otherwise unused. The water is usually discoloured, the river bed is muddy.

Recreational value: Intermediate.

Waitara River - Taratata to Bertrand Road

Motor launches: A little use is made of this river section below Tarata, but it is limited due to the shallows in many places.

Jet boats: This is, perhaps, the most heavily used section of the Waitara River. Jet boats may navigate downstream from Tarata as far as the boulder rapid immediately upstream of the Manganui River confluence. There are some very difficult rapids above this rapid that require experienced boaters to negotiate. From Bertrand Road Bridge, jet boats may navigate upstream to a little above the bluffs at Pukerangiora (5km). This is considered to be very good jet boating water.

Drift boats, Rafts: Considered excellent water, particularly from 5km above the Manganui confluence where the stony rapids begin. Grade 3 water.

Canoes/ kayaks: Excellent water from 5km above the Manganui River confluence. This is the most heavily used section of the Waitara by canoeists and at least one party of canoeists use this section every weekend. Grade 3 water and considered suitable for the average competent canoeist. A White Water Race used to be run over this section of river.

Pack floating: Rapids considered too severe for floating. Swimming: There are some good pools but access is awkward. Possibly some use below Bertrand Road Bridge.

Recreational value: High.

Waitara River - Bertrand Road to Sea

Motor launches: Motor launches, small coastal fishing craft and yachts use the lower river upstream as far as the Main Road Bridge. Beyond the bridge many craft navigate a further 4km. Water skiing is popular, launching at the ramp upstream of the Main Road Bridge.

Jet boats: With high water, jet boats may navigate the full length of this river section. It may be too low in late summer. This section is considered to be good boating.

Drift boats, Rafts, Canoes/kayaks: The 3km below the Bertrand Road Bridge are considered to be good water. However, beyond that, the river becomes flat and tidal, and swamp plants line the banks. There are numerous snags on the river's edge which need watching. A Rowing Club uses the lower river.

Pack floating: Unsuitable.

Swimming: The river is exceptionally polluted below the Bridge (Freezing Works) and the river has been seen to run red with blood and offal. The river becomes affected by pollution in this section. Swimming is not recommended.

Recreational value: Intermediate.

Swimming

There do not appear to be any published data to indicate the scale and location of swimming in Taranaki. TRC's state of the environment monitoring for freshwater contact recreational water quality (TRC, 2019) details the results of monitoring at 18 "popular contact recreational sites during each bathing season" but does not detail how these have been selected or provide any measure of relative popularity. All coastal and freshwater sites monitored for bathing water quality are shown in Figure 8, with water quality results as at January 2020.

Figure 8: Bathing quality monitoring sites and state (LAWA, Jan 2020)

The Manganui River is monitored at Everett Park east of Inglewood and the Waitara River at the Town Wharf near the coast. Lake Ratapiko is also monitored at the JBNZ boat ramp.

The LAWA swimming quality reporting for the Everett Park site notes:[11]

> *This ring plain river drains an extensively developed agricultural catchment. The site is situated at Everett Park approximately 300 m downstream of the Kurapete Stream confluence. It is a popular site for swimming, walking, picnicking and fishing.*
>
> *Since the 1999-2000 season's survey, discharges from the Inglewood municipal oxidation ponds' system into the Kurapete Stream (approximately 8km upstream of the survey site) have been diverted out of the stream to the New Plymouth wastewater treatment plant.*
>
> *Recreational bathing surveys over the last two summers (2017-2018 and 2018-2019) showed that 100% of samples met the freshwater microbiological water quality guidelines prepared by the Ministry of Environment in conjunction with the Ministry of Health (MfE, 2003) and did not exceed the 'Action' level (>550 E.coli cfu/100mls).*

[11] https://www.lawa.org.nz/explore-data/taranaki-region/swimming/manganui-river-at-everett-park-ds-kurapete-s/swimsite

And for Lake Ratapiko:[12]

> *Lake Ratapiko is approximately 12 kilometres from Inglewood township and drains the eastern hill country of the Waitara catchment area. The lake is replenished by diversion water flow from the mid reaches of the Manganui River for the Motukawa Hydro Electric Plant scheme.*
>
> *The lake is commonly used for boating and fishing, particularly at weekends and holidays.*
>
> *Recreational bathing surveys over the last two summers (2017-2018 and 2018-2019) showed that 100% of samples met the freshwater microbiological water quality guidelines prepared by the Ministry of Environment in conjunction with the Ministry of Health (MfE, 2003) and did not exceed the 'Action' level (>550 E.coli cfu/100mls).*

Lake Ratapiko was added to the monitoring suite of swimming sites in the 2007-08 season having been identified as being 'used locally for bathing and other recreational purposes' (TRC 2019, p13). TRC (2019, pp87-91) reported on all monitoring outcomes for the 2018-19 season for the Lake:

> *A total of 13 samples were collected at this site over the summer. All 13 scheduled SEM* [State of the Environment Monitoring] *samples were collected, and no follow up samples were required.*
>
> *Bathing usage of the lake was not observed. Jet-skiing was recorded on one occasion. However, the lake is commonly used for boating and fishing purposes, particularly at weekends and holidays. Ducks were present occasionally in low or common numbers. Minimal stock access to the lake margins was recorded, unlike on some past occasions (TRC, 2013). The lake was drawn down for maintenance purposes at the end of this season, after sampling for recreational water quality finished….*
>
> *The lake is replenished by diversion water flow from the mid reaches of the Manganui River via the Motukawa HEP scheme. Water quality was generally very good with minimal variation in clarity (median turbidity: 1.4 NTU; range of turbidity: 1.2 NTU) as a result of low suspended algae populations possibly due to short retention times in the lake. Water temperatures were relatively high over a moderately wide range of 10.0ºC for the period with a maximum of 26.3ºC (early afternoon in early February 2019) although all of the measurements were recorded prior to 1420 hrs. Conductivity showed very low variation (up to 11 µS/cm) during the period.*
>
> *Generally, bacteriological quality was good considering that the inflow to the lake is from the mid reaches of a river draining a developed farmland catchment….*
>
> *Bacteriological water quality was good and within acceptable guidelines for contact recreational usage throughout the survey period….*
>
> *No statistically significant trends in median* E.coli *counts have been found over the thirteen seasons of monitoring, which have indicated an unimportant decrease in* E.coli *numbers over this period. None of these medians exceeded the 'Alert' or 'Action' modes for freshwater contact recreational usage…*
>
> *Planktonic cyanobacteria had low biovolume levels throughout the recreational monitoring year (median biovolume 0.00 mm³/L). There was a moderate degree of variability, with biovolumes fluctuating between no cyanobacteria and moderate levels (range 0.00-0.92 mm³/L).*
>
> *Previously, no cyanobacteria had been found in this lake during any of the monitoring periods from 2006 to 2013 with the exception of low numbers of* Anabaena *present in the latter part of the 2007-2008 season following a lengthy, extremely low flow period. Also, moderate numbers of* Anabaena *were found during late January 2014 during a dry period, but these*

[12] https://www.lawa.org.nz/explore-data/taranaki-region/swimming/lake-ratapiko-at-boat-ramp/swimsite

numbers reduced rapidly by late February 2014 and none were found by the survey of mid-March 2014. A similar event, with a near 'high risk' bloom of Picocyanobacteria *occurred briefly in February 2016. The relatively short lake water residence time (due to hydroelectric power generation usage) may be a factor in the control of these bacteria populations.*

And for the Manganui River at Everett Park (with some reference to the Motukawa HEP scheme): (pp 82-87)

A total of 13 samples were collected at this site over the summer. All 13 scheduled SEM samples were collected, and no follow up samples were required.

Bathing or other usage of this river site was noted twice at the time of sampling occasions during the survey period, though the site is nearby to an outdoor adventure camp. Minimal birdlife was noted at this site during this season….

This ring plain river drains an extensively developed agricultural catchment, the site surveyed being situated at Everett Park approximately 300 m downstream of the Kurapete Stream confluence, and about 500 m below another (less utilised) Manganui River recreational site, upstream of the Kurapete Stream. Since the 1999-2000 season's survey, discharges from the Inglewood municipal oxidation ponds' system into the Kurapete Stream (approximately 8 km upstream of the survey site) have been diverted out of the stream to the New Plymouth wastewater treatment plant.

The river was clear and green-brown or colourless at the time of the majority of the sampling surveys, with relatively low and a narrow range of conductivity levels. Water temperatures varied over a moderate range of 6.6ºC with the maximum temperature (22.5ºC) recorded in mid-afternoon in mid-January 2019. Higher temperatures could be expected later in the day as no sampling surveys were performed after 1355 hrs at this site.

Bacteriological water quality was good for this site during the 2018-2019 survey period with none of the counts recorded during the period above 160 E. coli per 100 ml….

Bacteriological water quality at this site in terms of contact recreational usage was acceptable considering the impacts of farming activities, particularly in relation to the residual flow remaining in the river in mid-catchment downstream of the Motukawa HEP diversion (i.e., significant abstraction of upper catchment water for hydroelectric power production purposes).

The median E. coli *count for the 2018-2019 season was the lowest of the twenty-three seasons' medians recorded since the inception of the programme in 1996-97. No single sample entered the alert mode. The range of* E. coli *numbers was lower than typical of those recorded to date, mainly due to a low maximum count of 160 per 100 ml, the lowest of seasonal maxima recorded to date at this site….*

A slight, unimportant, and statistically insignificant increase in median E. coli *counts has been found over the twenty-three seasons of monitoring. None of these seasonal medians has exceeded the 'Alert' or 'Action' modes….*

Benthic cyanobacteria coverage was low for the monitoring period with a median of 2% (range from 0 to 18%). The 'Action' and 'Alert' levels were never exceeded for percentage cover or for detaching and exposed mats. The benthic cyanobacteria found were Microcoleus *sp.*

TRC (2019, p 97) ranked monitored sites by relative water quality standards for contact recreation for the region, placing Lake Ratapiko and the Manganui River at Everett Park first equal:

In terms of guidelines attainment, the sites may be ranked in the following order for the 2018-2019 season:

1= Patea River at boat ramp, Patea

1= Lake Ratapiko

1= Urenui River at estuary

1= Manganui River at Everett Park

5 Waingongoro River at Eltham

6 Waiwhakaiho River at Merrilands Domain

7 Oakura River d/s SH45 bridge

8 Waingongoro River at Ohawe Beach

9 Waitara River at town wharf

10 Lake Rotomanu

11 Kaupokonui River at beach domain

12 Patea River at King Edward Park

13 Lake Opunake at boat ramp

14 Timaru Stream at Weld Road (near mouth)

15 Waiwhakaiho River adjacent to Lake Rotomanu

16 Te Hēnui Stream at mouth, East End.

Jet and power boating

Navigation rules on rivers and lakes in Taranaki are set by Maritime NZ rather than the TRC, which is responsible for only navigation in the port area. Jet boating is only possible on rivers where vessels are permitted to travel at more than 5 knots (just over 9.2 kph) within defined areas. Regional navigation safety bylaws generally restrict speeds to less than 5 knots within 200 metres of the shore or any structure (amongst other things), which means jet boats would never be able to get to planing speed without an 'uplift' of this restriction. The Jet Boating New Zealand *Safety/Year Book* summarises uplifts nationally, and in the Taranaki Region, uplifts are limited to the Awakino, Mangaehu, Mokau, Patea, Tongaporutu and Waitara Rivers. For the Waitara River, the Yearbook notes:

WAITARA From inland boundary Waitara Borough to Makino Stream.

SECTION 1: Rerekapa Falls to confluence with Matirangi Stream. Class 4 [unlikely to be boated]. *120m / 25km* [fall over distance].

SECTION 2: Matirangi Stream to Tarata. Class 3 [difficult/adventure/skill] *rocks/rapids/logs. 60m/35km Only in flood.*

SECTION 3: Tarata to Manganui. Class 3 [difficult/adventure/skill] *rocks/rapids/logs/ falls. 70m/16km. Only in flood. Launching: Private ramp on Autawa Road- not open to public. Access only by contacting any committee member of Taranaki Branch JBNZ. NB Club ramp at Tarata Domain has been inundated with silt and it is not operable.*

SECTION 4: Manganui to Town Bridge. Class 3 [difficult/adventure/skill] *rocks/rapids/pressure waves. 70m/14km. Launching: Waitara near river mouth by Yacht Club and concrete ramp 200m upstream of town bridge Parris Street. Note 8km/h upstream to Town Bridge. Show respect for whitebaiters in Section 4 from August/November inclusive.*

Jet boating on Lake Ratapiko is managed according to the Lake Ratapiko Recreational Users Policy which was drafted by Powerco Ltd in 1996. This established a Lake Ratapiko Recreational Committee made up of representatives of Powerco (or their successors, and who would also represent the interests of the Taranaki Fish & Game Council, Inglewood Rod and Gun Club, North Taranaki Rod & Gun Club and any other recreational users and landowners), the New Plymouth

Water Ski Club (responsible for the western arm of the Lake) and the North Taranaki Power Boat Club (now the Taranaki branch of Jet Boating NZ) (responsible for the eastern arm). The Policy establishes access and use rules for regular users (club members) and casual users (non-club members) and gives responsibility to appointed wardens to implement the Policy. Policies include:

- Limiting power boat activity to between one hour after sunrise and one hour after sunset;
- Closing the Lake to all boating activity for the hunting season, as well as two weeks before opening day and one week after closing day.
- Dividing the eastern arm into two areas:
    - Area 1: the body of water "closest to the dam and spillway and also includes the area of the lake due west of Mr & Mrs McIntyre's residence. This area shall be reserved for the exclusive purpose of fishing, canoeing, and model boating - that is, recreational use of a more placid nature. Under no circumstances are Power Boats to enter into this area."
    - Area 2: the body of water "bounded by the Ratapiko Road culvert, and the Forebay arm "No Entry" signs. This area shall be reserved for the principle purpose of power boat racing. Canoeists are permitted to enter into this area but they must be prepared to give way to power boats."
- Reserving the western arm for water skiing.
- Making Jet Boat NZ responsible for maintaining their facilities on the eastern arm, and the New Plymouth Water Ski Club responsible for their facilities in the west, although the agreement seeks a contribution from Trustpower to help maintain the ramps and toilets at each site, if required, in recognition of their use by the public.

The Policy includes several rights and obligations for Trustpower ('the Company'):

- "The Company will attempt to hold the lake levels to those agreed with the Lake Ratapiko Recreational Users Committee. However due account must be taken of:
    - Weather conditions and race inflows,
    - Limitation of Resource Consents granted to the Company,
    - The commercial operation of the Company's generation activities.
- "Close the lake at any time for the purposes of dewatering in order to carrying out maintenance or repairs. Under normal circumstances such closures will be only made after due notice and consultation with the Lake Ratapiko Recreational Users Committee. However, the Company reserves the right to be able to close the lake without warning under emergency conditions.
- "Debar any group or person from using the lake on a permanent or temporary basis if in the opinion of the Company:-
    - The activities of that group or person will not complement the activities of other recreational users.
    - The group or person has demonstrated a lack of co-operation with other users.
    - Have a track record of "causing trouble" - either on this lake or in other areas."

Trustpower aims to maintain the lake level within 0.5m of its maximum during the summer season, although this is not specified in the Policy. Both the New Plymouth Water Ski Club and Jet Boating NZ signed with Trustpower in 2021 licences to occupy for their respective land-based areas of activity. These are aimed to permit occupation and to set out management and maintenance responsibilities. They do not define any responsibilities for lake level management.

Whitebaiting

The whitebait fishing season for Taranaki (and most of New Zealand) opens on 15 August and runs until 30 November. Fishing is only permitted between 5:00 am and 8:00 pm, or between 6:00 am and 9:00 pm when New Zealand Daylight Saving is being observed.[13]

Recreational whitebaiting is generally a poorly researched activity. No recent quantification of whitebaiting activity in Taranaki has been located for this report, with the most comprehensive study dating from 1981 and prepared by the Taranaki Catchment Commission. This study was based on aerial and ground counts of whitebaiters, diary records kept by whitebaiters and interviews. For the Waitara River, the study found: (p35)

> *Most whitebaiters on the Waitara River fish below State Highway 3 and use scoop nets. Many whitebait fishermen using this method place white boards in the river bed to assist observation of whitebait as shoals move upstream.*
>
> *Above State Highway 3, most whitebaiters use set nets and small side screens. To retain nets in the correct position in relation to the rising tide, nets are suspended from the bank by wire and rope. The western river bank receives heaviest use from whitebait fishermen and up to 45 whitebaiters have been counted along the river banks adjacent to Mamaku Road, with over 200 persons counted between Bertrand Road to the river mouth. Fishing from the eastern bank is limited because of access difficulties.*
>
> *Most whitebaiters interviewed during the 1980 whitebait season were from Waitara (62%), although 34% travelled from Bell Block and New Plymouth. A major factor attracting whitebaiters to the river is catch success with interviews indicating that the catch rate per individual effort for the Waitara River is second only to that of the Mokau River (which is extensively utilised by commercial whitebait fishermen). As far as is known, there are no commercial whitebaiters working on the Waitara River. 'Amateur' fishermen, however, are known to sell quantities of whitebait to local fish shops in Waitara and New Plymouth.*
>
> *The two major components of the Waitara River system, the Waitara River and the Manganui River, may have a significant effect on whitebait migrations in the lower Waitara River. Observations from experienced whitebait fishermen indicate that whitebait are scarce when the water in the lower Waitara River is dominated by runoff from the Manganui catchment (including the slopes of Mount Egmont and intensively farmed pasture).*
>
> *Local Maori residents suggest that 'good catches' of whitebait may be taken from the Waitara River before August in each year. In fact large shoals of whitebait have been reported from as early as the first weekend in June (approximately Queens Birthday weekend).*

The LAWA water quality monitoring dialogue for the Waitara River at the Town Wharf notes, “This site is used for swimming, whitebaiting (in season), fishing, walking and boating.”[14]

The 2016 TRC report *Freshwater bodies of outstanding or significant value in the Taranaki region - Review of the Regional Fresh Water Plan for Taranaki* identifies the Waitara River as one of 20 rivers and streams in the Region considered to be regionally significant for whitebaiting (see section 3.3).

[13] https://www.doc.govt.nz/parks-and-recreation/things-to-do/fishing/whitebaiting/whitebait-regulations-all-nz-except-west-coast/

[14] https://www.lawa.org.nz/explore-data/taranaki-region/swimming/waitara-river-town-wharf-waitara/swimsite

Hunting

There is little literature about hunting in the study area. Lake Ratapiko is closed to boating for the hunting season (4 May to 30 June in 2019), as well as two weeks before opening day and one week after closing day.

Advice on the Fish and Game website for Taranaki notes, in reference to hunting in Taranaki generally: "While there are few public hunting areas in the Taranaki Region, there are plenty of places to hunt waterfowl on private land – it's simply a matter of asking landowners for access." [15]

New Zealand Recreational River Use Study: specialisation, motivation and site preference

Galloway (2008) reported on the findings of a survey of individuals who recreate on and around rivers in New Zealand (*New Zealand Recreational River Use Study*). Individuals were invited to participate in an internet survey via direct contact at river recreation-related events and electronically via a range of related web sites, group membership, internet bulletin boards, magazines and newspapers. Just over 1300 respondents completed the survey which ran from October 2007 to March 2008. Although the survey results cannot be considered representative of the recreation population, as the sample was self-selected and not randomly generated, they give an impression of the opinions and preferences of what is probably the more active and aware end of the recreation participation spectrum.

Twenty-three activities were represented in the data. The dominant respondents were white water kayakers, anglers and multisport participants. Respondents were grouped into four broad activity groups: boating (non-motorised) (55.4%), fishing (21%), boating (motorised) (2.4%), and shore-based (21.2%).

The survey was designed to evaluate respondents' motivations and site preferences about their level of specialisation in their activity. It was not designed to ascribe values to defined reaches of rivers throughout New Zealand so, in that sense, its results must be treated conservatively.

A list of 1043 rivers was compiled, and respondents were asked to indicate up to ten rivers that they had last visited, and the next ten that they wished to visit. This provides a snapshot, rather than a complete picture of the respondents' experiences and views. A total of 4921 rankings were provided for 513 rivers. Rivers ranked more than 100 times included the Waimakariri (227), Tongariro (191), Buller (154), Hurunui (128), Kaituna (118), Mohaka (116), and Clutha (113) Rivers. The Waitara River was rated by 5 respondents out of 1300 (Galloway 2008: Table B), and consequently, no further analysis for the River was completed. The Manganui River was not identified by any respondents.

Water Bodies of National Importance

As part of the Government's assessment of Water Bodies of National Importance, work has been undertaken to identify water bodies of value for recreation and tourism. The recreation report, titled *Potential Water Bodies of National Importance for Recreation Value* (MfE, 2004), lists 105 freshwater bodies including lakes, river and wetlands that are potentially important for recreation, none of which was in the Taranaki Region. The list was derived from an internet survey of recreationists, a telephone survey of the public, a literature review and discussion with selected representatives of recreational groups. The report has many inconsistencies and the base research has significant weaknesses.

The internet survey with 772 respondents – which was based on a self-selected sample with an apparent bias to kayakers and canoeists – had no respondents referring to Lake Ratapiko or the Manganui or Waitara Rivers (Fink-Jensen et al 2004a). The telephone survey with 1041 respondents had one respondent identifying the Waitara River as a recreation setting and none for the other waterbodies, and no further analysis was carried out (Fink-Jensen et al 2004b).

[15] https://fishandgame.org.nz/game-bird-hunting-in-new-zealand/game-season-2019/whats-the-limit

National Inventory of Wild and Scenic Rivers

In 1982 the National Water and Soil Conservation Authority released a draft inventory of wild and scenic rivers and sought submissions. A resulting document was published in 1984 (Grindel 1984), and provided a list of what were considered to be "nationally important wild and scenic rivers." The final list excluded lakes because the Committee responsible for compiling the list decided that its terms of reference did not include them. Thirteen rivers were identified in the North Island and 40 in the South. Only Waitara River, including the Manganui River, was identified in the Taranaki Region, and as a 'Group One' river (priority for protection), with the text:

> *The Waitara's outstanding feature is the extraordinary number and quality of pa sites together with other strong associations for the Maori.*
>
> *It is the most important river for recreation in North Taranaki. It is used for private and commercial canoeing and rafting, a rowing club at Waitara, jetboating and waterskiing, whitebaiting, trout fishing in the upper reaches, camping, swimming, recreational and commercial eeling, and recreational lamprey (piharahu) fishing. In the headwaters in Moki State Forest the Rerekapa track gives access to a colony of kokako. Everett Park on the Manganui is used by picnickers.*

The Ministry of Agriculture and Fisheries made a substantial submission to the draft inventory in relation to freshwater angling values (Tierney *et al* 1982). The authors recommended no additions from Taranaki.

In 1986 the Protected Waters Assessment Committee released its recommendations for a, "*list of those lakes and rivers which the committee commends as suitable for inclusion in a Schedule of Protected Waters*" (Grindell and Guest 1986). The intention of the study was to advise the then Ministers of Works and Development and Conservation of, "*those waters deserving inclusion in a schedule of Protected Waters that can be attached to the Water and Soil Conservation Bill.*" The Waitara River did not appear in the list, nor any other Taranaki River.

Appendix 2: Interview summaries

These summaries are based on telephone interviews with each individual, and have been emailed to each for review and confirmation. In the case of the Taranaki Fish & Game Council, the summary is penned by Allen Stancliff subsequent to an interview.

Allen Stancliff – Taranaki Fish & Game Council

Manganui River trout fishery values

The Manganui River and its tributaries support a regionally significant fishery for brown trout. Trout are generally in good condition and can reach 2.5kg or more. The upper reaches upstream of the Motukawa diversion weir currently have little consumptive water use. Fish & Game provided comments to the TRC's draft Freshwater Plan (2015) seeking that the upper Manganui catchment upstream of Tariki Road (above Trustpower's diversion weir) be included in the Freshwater Plan as an outstanding waterbody in order to among other things limit future consumptive water use, but so far this has not occurred.

Angling use occurs throughout the Manganui River, with a majority of use occurring in the catchment upstream of the diversion weir where there is better water quality. There are also hotspots for angling activity further downstream, such as at Tarata and Bristol Roads, Everett Park and off Manganui Road.

Residual flow

Currently there is a year-round 400 l/s residual flow downstream of the Motukawa diversion weir to the first major tributary, Mangamawhete Stream. The 400 l/s residual flow was largely implemented for fish passage and native fish habitat purposes, rather than for trout habitat and a higher flow is likely required to improve habitat for trout and moderate high summer water temperatures. Water temperatures in the residual flow section got high enough to kill adult brown trout in late January 2018.

Fish pass

The fish pass generally appears to be effective, although there is a velocity pinch point at the inlet valve leading to the river upstream of the weir. Some rearrangement of the rocks in some of the fish pass steps would also aid fish passage. The former TRC biologist, Bart Jansma, tagged 3 adult brown trout in the fish pass some years ago, but none have since been recaptured by anglers. From Fish & Game's perspective it is critical that this pass is effective.

Inlet race and settling pond

These areas do provide habitat for trout and a small group of anglers target brown trout in the race. Some large koura are present also.

Lake Ratapiko

Wild populations of brown trout and perch are present, with 300 - 500 hatchery rainbow trout also released annually by Fish & Game. The Lake used to be a productive trout fishery, but the annual autumn lowering of the lake level for weed control in recent years has significantly reduced the quality of the fishery through disturbance to habitat and the macroinvertebrate fauna. The autumn lake lowering also impacts on waterfowl and gamebird hunting on the lake, as it usually occurs just prior to the opening of the season. Fish & Game would oppose the continued lowering of the lake level for weed control, however would support a move back to using spray for weed control.

Summary of fishery significance

- Waitara River mainstem: local significance. Lower reaches below Manganui River confluence fish well during low flow periods. Some stream mouth fishing in upper river tributaries.
- Makara Stream: trout known to be present.

- Manganui River: regional significance. Highly valued for large brown trout (above weir)
- Mangamawhete Stream: local significance.
- Lake Ratapiko: regional significance. Stocked with hatchery-reared trout. Good sized perch present.

Ross Goldsack – Jet Boating NZ President

Ross has been visiting Lake Ratapiko and jet boating in Taranaki for more than 20 years. Taranaki does not have a wide range of jet boating options. Flat water areas are limited to Lakes Rotomanu, Ratapiko (with its two different settings on each side) and Rotorangi (Patea Dam). The lower Waitara and Mokau Rivers are also available but are tidal. Rivers are limited to the Awakino (which is outside the Taranaki region), Mangaehu, Mokau, Patea and Waitara Rivers. An uplift on the Tongaporutu occurs occasionally (it used to have a ski lane, but this has been removed).

This limited number of options can lead to crowding on the lakes.

The Motukawa scheme has a minor effect on the Waitara River flow and this can be seen in the TRC online flow data for the river gauge at Tarata. Ross has occasional calls from jet boaters who do not know about the operation of the hydro scheme and are curious about the steps in the flow record chart for the river. However, the scheme does not affect boating opportunities on the Waitara, and new users are more curious as to why the flow fluctuates. The river has the reputation of a 'boat wrecker' and it does not conform to normal river patterns – where deep water might normally be expected, there could be a submerged rock not visible in discoloured water. New boaters are best to travel with an experienced group. JBNZ has an agreement with a private landowner at Tarata and launch there for trips upstream, although the lower river is the more popular section, and the scheme effects are less evident on the flow chart considering the input of the Manganui River upstream. Flow requirements depend on the type of boat used and the skills of the operator, and everyone will have different preferences. However, all winter and autumn flows are almost always good, while summer and spring are not so easy and a little rain might be required, and different flows will limit how far upstream you can travel. The top end is rarely boated.

Lake Ratapiko is very popular, and JBNZ manages access to the eastern end. The latest licences to occupy agreed with Trustpower do not include reference to any rules of recreational use of the lake, and the older rules established with Powerco still apply and are detailed in signs onsite and reminders are posted on the JBNZ Lake Ratapiko Facebook page[16]. The gates are locked during the duck hunting season – which is based on a gentleman's agreement rather than any fixed rules – and the lake is occasionally closed to the general public access for special JBNZ or corporate events – but it is otherwise available for casual use, with closures communicated via the Facebook page. The lake can get very busy with a mix of jet boats and jet skis, and most users are towing knee boards, biscuits or similar. On occasion 75 to 100 people are at the eastern side of the lake, with 10 or 12 boats and additional jet skis.

Rule adherence is pretty good, with voluntary wardens and a past JBNZ secretary who entrenched very good understanding of use requirements. The local landowners also keep an eye on things and will phone JBNZ if there are any issues. There has been very few problems with littering or large parties at the lake, and only the odd hoon who doesn't understand or ignores the rules.

Trustpower has been very accommodating to the club and JBNZ really respects the relationship. For example, weeds in the lake can be a problem over summer, choking jet intakes, but if JBNZ notifies Trustpower of a weekend event, they do their best to maintain the lake at a higher level so the weeds are submerged. Water depth is never really an issue, although there are some users who turn up outside the season and do not understand that it is a hydro lake and is often drawn down beyond summer. Ross suggests that some additional information onsite about the operation of the scheme would be useful and interesting, considering that there is nothing obvious at Ratapiko – such as a

[16] https://www.facebook.com/Lake-Ratapiko-Info-Page-332793174300952/

power station or control gates – to indicate the rationale for the lake. JBNZ also has a role to socialise the function of the lake via its membership and Facebook site.

Trustpower has made a genuine commitment to the club over the years to support their activities, with financial support for large infrastructure works, such as the redeveloped ramp. The club sees the relationship as very functional, healthy and solid and Trustpower seems to be doing an excellent job of keeping everyone happy. Similarly, the local farming community takes a real interest in the facilities and are very supportive.

Damian Muir – President New Plymouth Water Ski Club

The Club's season on Lake Ratapiko runs from Labour Weekend to Easter. During this time informal agreement with Trustpower sees good lake levels maintained over weekends and public holidays and from Christmas to the end of January. The Club has a good relationship with the operations team of Trustpower and make direct contact when any issues arise. For example, during the weekend of Taranaki Anniversary Day, lake levels dropped late on the Sunday because the Tauranga-based scheme operators were not aware of the regional holiday, but were able to raise the level again for the Monday holiday after a call from the Club.

If the lake level is too high, wakes can reflect off the lake edge and interfere with activities – whereas at normal high levels, the wakes are dispersed and do not reflect. A recent busy weekend had a too high lake level, but a phone call to operations staff had the lake suitably lowered. The Club is very keen to retain the status quo with regard to its relationship with Trustpower.

Lake Ratapiko is one of the best water ski venues in New Zealand, since the entire course can be seen from the clubrooms. Spectators get to see all activities and competitions. The regional tournament on Lake Ratapiko is the second largest event in NZ after the national championships.

The Club is in its 67th year and although Club activity was quiet about 12 years ago, a new generation of skiers has re-energised activities and restarted tournaments. Several members have national records, and coaching and competitions for juniors should see the Club endure. The spectator component of the setting is very important to sustain this. The Club is currently able to offer only C Class tournaments where they cannot register any speed records. They are considering gaining a B Class, but require accurate measurement of various racing distances – although the current C Class ensures events are suitably casual and family-friendly. Focusing on family activities is a priority for the Club.

Weekends are very busy, but there are no current capacity issues with lake activities or the Club facilities. A limited membership ensures that there is not too much pressure. Casual users are welcome by agreement – such as kayakers, paddle boarders and fishers – if there is no major event and little risk of conflict. Some swimmers come over from the eastern side of the Lake to avoid crowding there. During large events, a local farmer opens a nearby paddock for overflow parking, and so there have not been issues with facility capacity. Locals assist with tree pruning and facility maintenance, and the Club has a good relationship with neighbours to the Lake.

The Club has been opening their facility to various charities for fundraisers and to support special needs individuals with boat rides and skiing.

There is a real concern amongst the Club about opening the western side of the Lake to general public use. The level of activity on the eastern arm of the Lake and the varying levels of rules compliance there is not considered appropriate for the western side. Such use patterns would end competitive water skiing on the Lake, and therefore in Taranaki.

The new Licence to Occupy with Trustpower – which the Club supports 100% – requires the removal of caravans over winter to comply with resource consent requirements, and the Club is ensuring all its facilities are also appropriately consented, and this is all considered necessary and appropriate.

Water quality varies depending on recent rainfall – after which it can get dirty – although this doesn't bother anyone. There have been some issues with water weeds in past years – 2018/19 was warm and dry and the lake tended to be a little lower, and there were some significant growths requiring manual removal by club members around their facilities, but the past two seasons have been good. The Club understands that Trustpower is exploring some new weed control methods – potentially spraying – and they would support such work.

If the Lake is low, boats need to be careful at the top end. The Club would be fully supportive of any proposals to lower the lakebed in the central to top end.

Chris Harvey – New Plymouth Kayak Club and New Plymouth Boy's High School

The club holds meets every Thursday at the Mangorei tailrace, offering slalom, play boating, river rescue training and beginner and intermediate lessons. The race is also used casually quite frequently at other times when running.

The other key whitewater resources in the region are the Waitara, Waiwhakaiho, Manganui, Stony and Mangorei Rivers and Kiri Stream. The Club describes and promotes these settings via its website.

The Waitara River is also highly valued since it tends to hold water for longer after rain. Most other rivers are rain-dependent and the windows for use are quite narrow – you need to get out there quickly after rain.

The Manganui also holds water and is a good grade 2 or 3. The recommended get-in on the Manganui is Bristol Road near Everett Park (more than 10kms downstream from the Motukawa Scheme diversion) and Chris has never kayaked near the Scheme diversion. The Club website refers to the upper Manganui thus: "The upper sections have been run from the Park boundary to SH3 but has a lot of overhanging vegetation and is not of the quality of the upper Waiwhakaiho, more just an exploration run." The Motukawa Scheme diversion is downstream of SH3.

The normal get-out for the Manganui and Waitara near the Waitara/Manganui confluence (the 'Hole in the Hedge') is over private land and has recently been closed. This requires a longer run on both rivers and has been a problem for kayakers.

Peter Van Lith – Canoe and Kayak (retailer), Yakity Yak Kayak Club Taranaki

The Mangorei tailrace is an important regional resource for kayak training. Trustpower is very helpful with letting it run when they can. They only limitation is the availability of water. Flows are generally good in early January but can be less frequent from mid-January through to March and sometimes April. All rain dependent. If the tailrace is not generating the Waiwhakaiho is also normally low, so the catchment is generally not suited to kayaking when there's been insufficient rain.

The Waitara River would be the only other suitable training water in the region, but that requires shuttles and a time commitment. The race is the only park and play option.

The normal Manganui River run starts at Bristol Road below the Motukawa diversion and would usually finish at site called the 'hole in the hedge' on Everett Road across private land. The landowner has recently started refusing access and the get-out is now at the confluence of the Waitara and Manganui via Manganui Road. Peter has never kayaked the upper section with the Scheme diversion and has not noticed any effect on flow from the Scheme. It is just a matter of checking the TRC flow data and seeing if it's suitable. The Manganui is generally very clear and scenic – grade 2 or 3.

The Waitara River runs normally start at the Manganui confluence with get-out options at Spargo Road and Bertrand Road. There might be a few cumecs variation in the flow courtesy of the Motukawa Scheme, but there is no effect on kayaking. Minimum flows for the get-in at Bristol Road immediately upstream of Everett Park are around 20m^3/s, but it's a bit bony and 25+ is preferable. At over 70m^3/s the river tends to wash out (loses its hydraulic features).

The other main kayaking rivers – the Kiri, Oakura and Stony – are of higher grade (although the Oakura is a bit easier than the other two) and are steeper with more hazards – and are not run as often as the rivers affected by the Schemes.

Appendix 3: Lake Ratapiko water level hydrographs 2016 – 2020 (Leong 2021)