Ruataniwha Water Storage Scheme
Recreation Assessment

Prepared for
Hawke's Bay Regional Investment Company Limited

Ruataniwha Water Storage Scheme Recreation Assessment

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Contents

Executive Summary

Potential Environmental Effects

1.1 Potential recreation effects of the proposed Ruataniwha Water Storage Scheme (the Scheme) include the following:

Recreation Zone 1 - (upstream of the dam head)

- Effects on access to the Ruahine Forest Park for a range of recreation activities including tramping/ hiking, hunting, mountain biking, kayaking and fishing.
- Effects on the activity of fishing, four wheel driving and kayaking in the dam footprint. The opportunity to undertake these activities in 'recreation zone' 1 will be affected.
- Effects on day visits and the activities associated with scouts/Wakarara Camp at the Wakarara Road End and associated heritage and natural amenity areas. The Wakarara Road End will be affected.
- The activity of camping will be affected. The private camping ground at Wakarara Road End is located within the dam footprint.

Recreation Zone 2 - (between the dam head and the upstream water intake)

- There will be no effects on existing access to the Makaroro River and Waipawa River.
- Monthly mean flows would be generally more consistent during the year. There would be greater flow (compared with current flows) in the summer and lower flows (compared with current flows) in the winter. Average flows during the irrigation season (October to April) would be considerably higher. Although the activities of fishing, swimming and kayaking will not be lost, the nature of the activity in 'recreation zone' 2 will change.

Zone M – (forms part of the wider distribution network)

- The recreation activities that occur at Walker Road end are unlikely to be affected by the intake structure proposed in this area.
- Currently the Papanui Stream has low amenity values characterised by low flows and weed growth. As part of the proposal to utilise the stream for the conveyance of irrigation water through Zone M, it is proposed to improve the instream ecology, general amenity through a Papanui Stream Rehabilitation Plan as set out in the Proposed Resource Consent Conditions. This rehabilitation may '*provide recreation opportunities, such as developing a walking/cycling path, linking the settlements of Otane and Waipawa at the edge of the new riparian margins along a portion of the Papanui Stream, subject to engagement and approval by with landowners',* thus creating a positive environmental effect. Our conclusion is that Zone M (Papanui Stream Section)

has the potential to have a positive recreational effect through the provision of cycling opportunities suitable for recreational cyclists of all ages as well as additional walking opportunities.

Effects During Construction

- Effects on access to all current recreation activities during construction.
- Effects on the activities of kayaking, fishing, four-wheel driving, day picnicking and swimming during construction.

Assessments Undertaken

1.2 Hawke's Bay Regional Council commissioned Opus to prepare a Recreation Assessment (April 2012) which addresses the following:

- Identify and characterise the range of recreational activities undertaken in the Scheme area. Determine the context of these opportunities on the basis of the range and availability of existing outdoor recreational opportunities within Hawke's Bay and surrounding regions as well as their proximity to people living in Hawke's Bay.
- Assess the effects of the Scheme on the identified recreational activities being undertaken in the Scheme area.
- Identify and characterise any new recreational opportunities that may be created by the Scheme, and their potential benefits (in the context of the availability of existing outdoor recreational opportunities available to Hawke's Bay residents).
- Identify and report on any available and appropriate means to avoid, remedy or mitigate adverse effects on current recreational use of the Scheme area.

1.3 The Recreation Assessment was undertaken between the months of December 2011 and February 2012 as part of the feasibility stage of the project. It entailed observation from two site visits; consultation with key stakeholders and recreational groups; and research of relevant literature to develop a sound understanding of the Scheme area and proposal (as it then was) and associated recreation activities currently undertaken. Findings from other dam developments were also reviewed, particularly where recreation has been considered. This assisted in developing an overall impression of the activities affected, possible mitigation for the effects identified and possible opportunities for a scheme of this nature. A further site visit was undertaken in March 2013 to assess the changes from the Feasibility Design to the Application Design, which for the purposes of this report focus primarily on the inclusion of Zone M to the project.

Results of Assessment and Suggested Approach for Effects Identified

1.4 The suggested approach for effects identified for each recreation activity is discussed in Section 4 of this Assessment. Overall the main effect on recreation will be loss of access to recreation activities in the wider area. It is recommended that alternative access to these activities be provided for in the long term. This has been adopted in the Project Description (PD) by Hawke's Bay Regional Investment

Company Limited (HBRIC Ltd) including a commitment to alternative access around the top end of the reservoir.

1.5 The other key conclusion of this report is in relation to the opportunity the completed dam and reservoir will have for recreation activities. Flat water is sought after in Hawke's Bay for rowing and motor boat activities, and it is acknowledged that there is potential for these and a range of other recreational activities such as fishing, swimming and lakeside activities to be provided for at the reservoir. Proposed mitigation acknowledges the provision of these activities is a desired outcome and we recommend that work be undertaken with user groups to better understand their needs and the ability of the dam to accommodate these.

1.6 Issues such as water plumage (as discussed further in section 1.2 of this assessment); de-vegetation (or lack of) and how this is managed (discussed further in section 1.2); and treatment of the 'dead zone' around the dam periphery will potentially place constraints on the dam for recreational use.

1.7 A workshop on a potential integrated mitigation and offset programme associated with the physical effects of the Scheme on the environment was held on 6 March 2012. This was attended by representatives from the Department of Conservation (DoC) and Iwi along with the authors of the (now completed) recreation, landscape, archaeology and terrestrial ecology reports.[1] The recommendations contained in this report were discussed at the workshop.

1.8 Following further engagement with landowners and other stakeholders over the period since that meeting to discuss implementation of these recommendations, HBRIC Ltd has completed a separate report entitled "Ruataniwha Water Storage Scheme – Proposed Integrated Mitigation and Offset Approach" (HBRIC May 2013f). This explains the commitments being made to address or offset any adverse effects of the Scheme including on current recreation activities, particularly in the reservoir area, and to support or promote new recreational opportunities created by the Scheme.

1.9 The suggested approach for effects identified for each recreation activity assessed in this report applies these commitments as recorded in HBRIC May 2013f. Proposed conditions of consent would require these commitments including the requirement to implement the Integrated Mitigation and Offset Approach and through a Reservoir Filling and Edge Rehabilitation Plan to be progressively implemented upon commencement of construction of the Scheme.

[1] Refer Kessels & Associates (May 2013), Clough & Associates (May 2013), Isthmus (May 2013).

1 Introduction

1.1 Purpose of this Report

The proposed Ruataniwha Water Storage Scheme (the Scheme) seeks to store water for distribution to irrigable land, primarily on the Ruataniwha Plains in Central Hawke's Bay.

The purpose of this report is to present the findings of an assessment of the effects of the Scheme on existing recreational activities in the Scheme area and to identify any potential opportunities for the Scheme to support new recreational activities.

This recreation assessment summarises the recreation values and opportunities of the Scheme area as identified by existing recreation users and through a review of other studies. It assesses the regional significance of those values and opportunities and how they might be impacted as a result of the Scheme. This assessment also identifies possible mitigation to address those impacts and possible recreation opportunities that might/ are likely to arise as a result of the Scheme.

The assessment of recreation effects in this report is based on the proposed Scheme as described in the report prepared by Tonkin and Taylor Limited entitled *Ruataniwha Water Storage Scheme: Project Description* (Tonkin & Taylor, May 2013a), referred to in this report as the Project Description (PD)[2]. The assessment process has however preceded and informed completion of the PD, and as such aspects of this report refer to earlier iterations of the Scheme, where necessary to explain the assessment recorded in this report.

The assessment in this report has also contributed to the Scheme design process including as now summarised in the separate report "Ruataniwha Water Storage Scheme – Proposed Integrated Mitigation and Offset Approach" (Hawkes Bay Regional Investment Company, 2013).

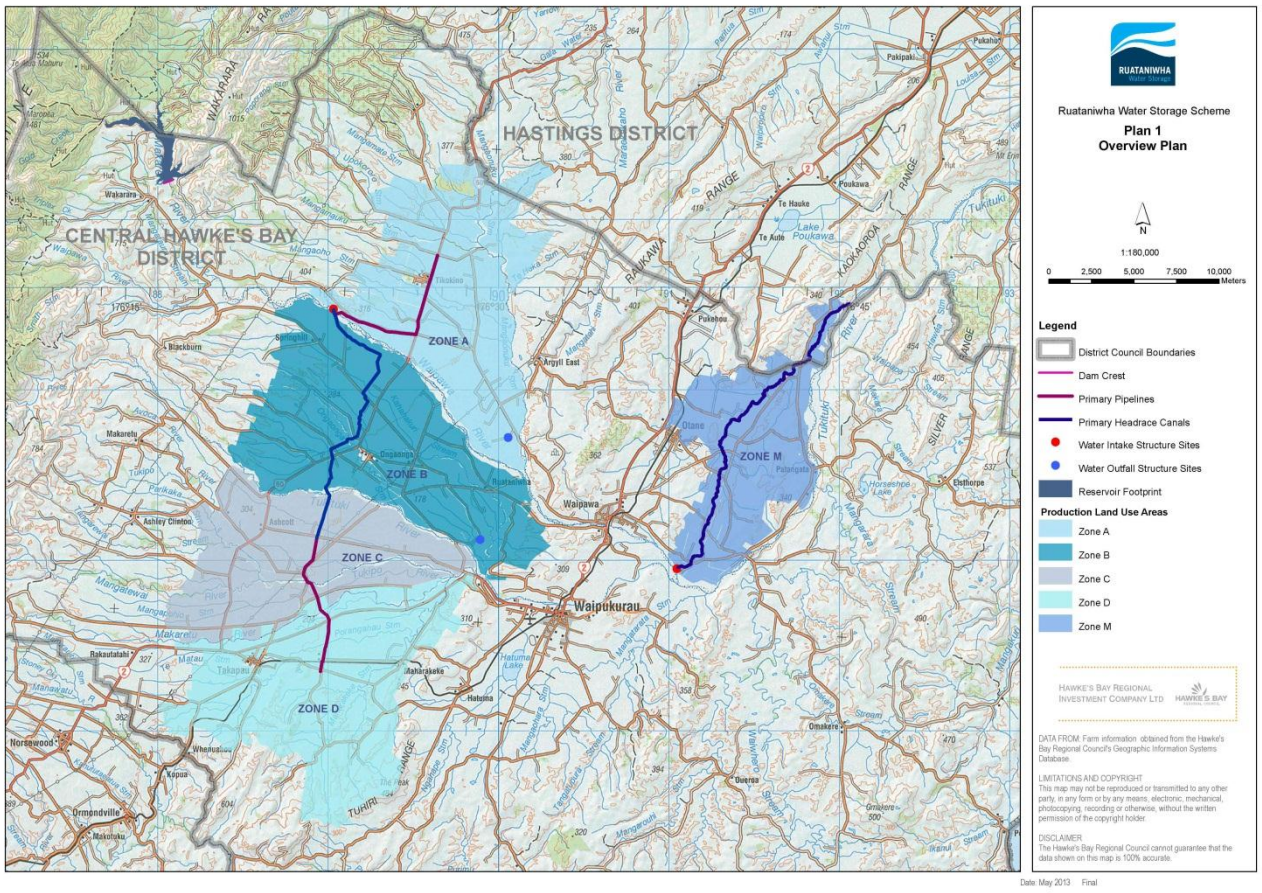
1.2 Scheme Description and Location

The Application Design includes two key infrastructure developments: 1) the storage dam and associated works; 2) the water distribution network which includes the primary distribution system and secondary distribution system (refer to PD for full description). The dam and reservoir is to be located on the Makaroro River, a tributary to the Waipawa and Tukituki Rivers. The water distribution network commences at the upstream water intake on the Waipawa River and includes the Papanui Stream (Old Waipawa River channel).

The headwaters of the Makaroro lie in the Eastern Ruahine Ranges part of the lower North Island main divide, and are part of the Ruahine Forest Park, an area of 94,000 hectares managed by the Department of Conservation for recreation, conservation and watershed purposes. The water distribution network commences on the Waipawa River approximately 22 kilometres down-stream from the toe of the dam, in a mainly rural area currently used for mixed grazing and cropping purposes.

[2] Consultation with recreation codes and other relevant stakeholders was undertaken prior to the Project Description being finalised. It should therefore be noted that consultation is based on the Project Description as it had been developed at the time of consultation.

Figure 1.0 Location Map



Ruataniwha Water Storage Scheme

Key features of the Scheme identified in the PD and associated reports where specified, of relevance to recreation include:

<u>During Construction</u>

- Construction works are expected to take 54 months. Recreation activities will be temporarily affected during this time, such as access to tramping and fishing amenity. The proposed conditions of consent require the preparation of a Reservoir Filling and Edge Rehabilitation Plan (RFERP) that will seek to manage this type of disruption during construction, and in the longer term. Such measures within the RFERP could include notification through signage and an appropriate public communications programme throughout construction.

NOTE: The remainder of this report considers post construction effects.

<u>Post Construction</u>

- The proposed reservoir operating regime involves a maximum 20 metre range in water height below full supply level, over 80% of any given year (and 90% winter through

summer).[3] Current access at the Wakarara Road End will be severed except during low reservoir levels and recreational use of the reservoir will potentially be impacted by this reservoir level variability both in terms of access and amenity. Any access to and around the reservoir for recreational purposes will need to take this into account. The RFERP process provides opportunity for future recreational use of the reservoir to be appropriately considered and addressed. The RFERP would have an objective of optimising the value of the reservoir and its surrounds for recreational use, having regard to the need for water levels to fluctuate.

- As is referred to in NIWA (May 2013b) the clearance of all vegetation in the dam footprint is likely to be impractical given the topography of the site. *'The modelling indicates that the biomass associated with that vegetation will affect the oxygen budget in the reservoir in the first few years until the organic matter has decomposed. The modelling also indicated that the effect may be short lived with the period of bottom water hypoxia decreasing substantially over the first 5 years. It may however, be expedient to remove tall trees around the edge of the reservoir that will be near or above the surface of the reservoir under normal operational conditions, as a safety precaution for recreational boating'*. The issue of leaving vegetation in the dam footprint will have implications for any potential future recreational use in the dam.

- As is also referred to in NIWA (May 2013b) *'assessment of suitability of reservoir water quality for aquatic life, recreation and other uses is based on generally accepted criteria of temperature (>20 degrees Celsius) dissolved oxygen content (>5 g m-3), food supply and habitat availability. The water quality in the reservoir will be suitable for aquatic life, recreation (e.g. boating, swimming and fishing) and other uses such as native fauna and aesthetic appreciation'*.

- Key indicators of importance for recreational use of the dam are visual clarity, cyanobacteria and faecal indicators. As is referred to in NIWA (May 2013b) visual clarity is likely to be an issue when dam water levels are low and there is wave action (windy conditions). The turbid zone is likely to be around the edge of the dam where the substrate is clay. This scenario is most likely to occur in summer when the dam is also most likely to be used for recreational activity. The risk of an influx of cyanobacteria is expected to be low (NIWA (May 2013b)). With regard to faecal indicators, the water in the dam should be suitable for recreation all year (NIWA (May 2013b)) therefore visual clarity is potentially a key issue that may affect recreational activity during summer months.

- 'Flushing' flows are proposed for the purpose of clearing the riverbed downstream of the dam footprint of undesirable algal growth. A primary flushing flow of up to 2.0 million m^3 per irrigation season, corresponding with the release of up to two flushing flows of up to $30m^3/s$ in size has been provided for within the Application Design. Each flushing flow will have a duration of 9.25 hours and a maximum volume of 1 million m^3. Flushing will be implemented when river levels and algal growth reach certain trigger points as specified in proposed conditions accompanying this application. There are subsequent implications for current recreation and recreation opportunity as a result of the proposed flushing flow regime.

- The PD identifies that monthly mean flows below the dam/reservoir footprint (Recreation Zone 2 or reaches 3 and 4) would be broadly more uniform throughout the

[3] Refer Section 3 of PD

year with flows substantially higher than present in summer months (October – April) and substantially lower in winter months (April, May and June). Recreational users will need to understand the implications of these changes.

- Fish passage has been identified as an issue over the dam structure and trout passage will be severed by the proposed dam. A 'trap and transfer' method is proposed for the purposes of re-stocking the respective stretches of river/dam appropriately (refer HBRIC May 2013f). With this in mind there are implications for recreational fishing up-stream of the dam wall as a result of the proposal. Existing fishing opportunities will be altered.

- As is referred to in the Characterisation of Water Quality Study (NIWA, 2012) *'suitable habitat for trout will still exist upstream of the reservoir while the reservoir will provide a new habitat and recreational facility. The upstream river and littoral zones (edge water areas to the limit of light penetration) of the reservoir would support existing and new habitat for eels and dwarf inanga (species that normally remain in shallower areas)*'. There are potential recreational fishing opportunities if these fish species are brought into the new environment.

- Drawing 27690.DA-100-5 (attached to the PD) identifies the proposed extent of the dam and reservoir.

- As referred to in NIWA (May 2013b), in order to reduce the occurrence of water below the main draw depth becoming hypoxic and potentially anoxic during summer, it is proposed that an aeration bubbler (aerator) be placed at the outlet end of the dam. Where aerators are used in publically accessible water bodies, there is an issue in that the rising plume of bubbles occupies part of the water volume and thus that water has a much lower density which will not support the weight of a boat or swimmer if completely inside the bubble plume. Warning signs showing where the plume is operating would be required.

It is also understood that the upstream and downstream water intake areas and water distribution network (to be located on the Ruataniwha Plains), with the exception of some parts of Zone M Papanui Headrace Concept, will not be accessible to the public. Any potential for recreation activities associated with the non-accessible components of the Scheme have not been considered in this report.

1.3 Scope of the Recreation Assessment

For the purpose of this assessment, the Scheme has been divided into two zones of recreation activity; the dam and upper Makaroro River; and downstream from below the toe of the dam to the upstream water intake, as shown in Figure 2.0. Zone M is also described as a distinct recreation zone (Environmental Management Services Ltd, 2013). These recreation zones are discussed further in section 2.1 (methodology).

The scope of this recreation assessment covers the following:

- Identify and characterise the range of recreational activities undertaken in the Scheme area, and the context of these opportunities on the basis of the range and availability of existing outdoor recreational opportunities within Hawke's Bay and surrounding regions, and their proximity to people living in Hawke's Bay.

- Assess the effects of the Scheme on the identified recreational activities being undertaken in the Scheme area.
- Identify and characterise any new recreational opportunities that may be created by the Scheme, and their potential benefits (in the context of the availability of existing outdoor recreational opportunities available to Hawke's Bay residents).
- Identify and report on any available and appropriate means to avoid, remedy or mitigate adverse effects of the Scheme on current recreational use of the Scheme area.

Figure 2.0 Study Area Recreation Zones

Typical upper Makaroro river corridor

Typical upper Makaroro setting

Recreation Zone 1

(Dam footprint & Upper Makaroro)

Wakarara Road

Dam Head location

Looking back upstream from proposed dam head

Wakarara Road End

Recreation Zone 2

(River corridor downstream of dam footprint to upstream water intake)

Makaroro River at location of proposed dam head

Burnt Bridge

Makaroro River at Burnt Bridge

Waipawa Intake Area

2 Assessment Undertaken

2.1 Project Methodology

Two site visits were undertaken; consultation with key stakeholders[4] and recreational groups; and research of relevant literature to develop an understanding of recreation activity in the Scheme area. Lessons from other dam developments were also reviewed, including where new recreation opportunities have arisen as a result of dam development. Each of these assessment mechanisms is discussed in further detail below.

2.1.1 Site Visits

The first site visit on 2 December 2011 was undertaken with Council staff and other consultants and its key purpose was to develop a better understanding of the Scheme. Specific site locations visited included the area of the proposed upstream water intake (accessed from Caldwell Road); the site of the proposed dam head and associated works (accessed across private land); and the Wakarara Road End.

A second site visit was undertaken on 19 December 2011 by the recreation assessment project team. This involved spending a 24 hour period on site to assist in developing a thorough understanding of the recreation values in and around the Scheme area across the spectrum of daylight hours. A full day was spent exploring the area including taking the opportunity to walk into Barlow Hut via Barlow Track. Barlow Track is considered to be typical of the tracks in the area that will be impacted through loss of access should the proposal proceed.

A third site visit was undertaken on 6 March 2013 by the recreation assessment project team to understand potential impacts of the Scheme in terms of access to Walker Road (downstream water intake) by recreational users, and the inclusion of Papanui Stream and its subsequent recreation potential.

2.1.2 Recreation User Consultation

Early in the assessment, a database of key contacts was established comprising all identified key current and potential (likely beneficiaries to new opportunities) stakeholders. These included 'potential dam users' such as rowing and water skiing groups. Initial communication was made via email and telephone correspondence and a face to face meeting arranged where there was interest in doing so. A full list of consultation is included in appendix 2.

Each of the key stakeholders was given the opportunity to obtain further information about the Scheme if requested (map, and contact details for Core Project Team at Hawke's Bay Regional Council (HBRC)). It should be noted that consultation undertaken was based on Tonkin and Taylor's Initial Project Description for the Ruataniwha Water Storage Project (dated January 2012).

[4] Consultation with recreation codes and other relevant stakeholders was undertaken prior to the Project Description being finalised. It should therefore be noted that consultation is based on the Project Description as it had been developed at the time of consultation.

Five key topics specifically related to recreation were discussed. These are listed below:

1) *Understanding the recreational activities undertaken in the Scheme area.*

2) *How these activities fit into the wider context of recreation opportunities in Hawke's Bay and surrounding regions, and their proximity to people living in Hawke's Bay.*

3) *Understanding the effects of the Scheme on the identified recreational activities being undertaken in the Scheme area.*

4) *Discussing what can be done to avoid, remedy or mitigate adverse effects on recreation as a result of the Scheme.*

5) *Identifying and characterising any new recreational opportunities that may be created by the Scheme, and their potential benefits (in the context of the availability of existing outdoor recreational opportunities available to Hawke's Bay residents).*

The range of responses to these questions was recorded with a summary of the discussions documented and confirmed with each party. The full record of discussions is attached as appendix 2.

2.1.3 Literature Review

A literature review was undertaken to identify and/or better understand existing recreation opportunities. This included relevant case studies, associated best practice/learning's and available information about current recreation use and opportunities of the Scheme area itself. Relevant information was sourced through a variety of means including information provided by HBRC's own research team; recommended information from key contacts; and an internet and guide book search.

The documents reviewed within this literature research are listed below, with the full literature review provided in appendix 3.

Table 1.0: Literature Research

Local and Regional Literature:	• Tukituki Catchment Values Setting Hawke's Bay Regional Council Draft (dated Dec 2011). • 'White-water Kayaking in Hawke's Bay: Application of the River Values Assessment System (RiVAS)' Report (dated Nov 2010). • 'River Swimming in Hawke's Bay: Application of the River Values Assessment System (RiVAS)' Report (no date). • 'Salmonid Angling in Hawke's Bay: Application of the River Values Assessment System (RiVAS)' Report (dated May 2011). • Tukituki Catchment Terrestrial Ecology Characterisation Report MWH (dated 2011). • Hawke's Bay Rural Open Space Study Resource Assessment, Environmental Management Services for Hawke's Bay Regional Council (dated July 2007). • Eastern Ruahine Forest Park Central Hawke's Bay Information Brochure Department of Conservation (unknown). • Hawke's Bay East Conservancy Recreation Opportunities Review Submissions Analysis and Decision- Department of Conservation (dated 2004). • Hawke's Bay Fish and Game http://www.nzfishing.com/AboutFishinginNZ/FGRegionalPamhlets/HBpamphlets.htm • Central Hawke's Bay Cycling Strategy Review (dated 2009)

National Literature:	• White Water NZ http://rivers.org.nz/nz/hawke's-bay • Protecting New Zealand's Rivers New Zealand Conservation Authority (dated April 2011) http://www.doc.govt.nz/publications/getting-involved/nz-conservation-authority-and-boards/protecting-new-zealands-rivers • Central Plains Water proposal http://rivers.org.nz/conservation • Mokihinui HEPS Recreation and Tourism Assessment Greenaway and Associates http://www.wcrc.govt.nz/mokihinui/application • National Significance: Potential Water Bodies of National Importance for Recreation MfE (dated 2004) http://www.mfe.govt.nz/publications/water/national -importance-rec-dec04/national imporantce-rec-dec04.pdf • Trout Angling in New Zealand Rivers Tierney and Jowett Hughey, K.F.D., Baker, M-A. (eds). (2010a). The River Values Assessment System: Volume 1: Overview of the Method, Guidelines for Use and Application to Recreational Values. LEAP Report No.24A, Lincoln University, New Zealand. • Recreation Opportunities Spectrum: http://www.tba.co.nz/kete/PDF_files/ITP105_recreational_opportunity_spectrum.pdf • Discussion of recreation values (including angling, kayak & canoeing: http://www.mfe.govt.nz/issues/water/freshwater/water-conservation/hurunui-river/html/page4.html#ftn19
Best Practice Literature:	• Estimating Future Recreation Demand: A Decision Guide for the Practitioner US Department of The Interior Bureau of Reclamation (dated January 2007). • Environment Canterbury Inventory of Recreation Values of the Rivers and Lakes in Canterbury via Greenaway, Rob. Hurunui Water Project, Recreation Assessment of Effects, page 23 (dated 2009). • Lake Opuha Recreation Benefits http://www.fairlie.net.nz/lake_opuha.html

2.2 Analysis Methods

2.2.1 Recreation Opportunity Spectrum

The analysis undertaken for the purposes of this recreation assessment is based on the Recreation Opportunities Spectrum (ROS) method. The ROS system is based on the assumption that there is a range of open space settings and that these form a 'spectrum' of recreational opportunity within a particular area.

The key theory behind this methodology is that the range of open space settings along the recreational spectrum serve a function and fill a particular recreational niche. No one setting has more or less significance and different opportunities for recreational activity cater to a range of different recreational needs. The ROS places importance on the need for a balanced representative spectrum of recreation opportunity over a geographic area.

Recreation opportunities are generally described along an open space continuum from urban to primitive settings in accordance with the ROS as shown in figure 3.0 (Reclaimation, January 2007) below.

Figure 3.0 Recreation Opportunities/ Settings

Urban	Suburban	Rural Developed	Rural Natural	Semi Primitive	Primitive

The ROS provides context for understanding the environmental settings and the nature of the recreation opportunity available, and can be compared with the frequency (common or rare) of similar settings in other parts of the region, and thus provide understanding of a particular settings significance (in the case the Makaroro River) in a regional context (in this case the wider Hawke's Bay area).

Using this framework has assisted in drawing conclusions about particular recreational activities in the Scheme area and their significance in the wider Hawke's Bay context.

2.2.2 Demarcation of Recreation Zones

It was identified early in the assessment that there were potentially three distinct areas of recreation activity/settings (also referred to as 'recreation zones'). The three 'recreation zones' were the environment including the dam footprint and the upper Makaroro catchment, the area below the dam to the upstream water intake in the river, and the water distribution network. The water distribution network 'recreation zone' was subsequently omitted from the assessment (with the exception of Zone M) given the need to restrict access as discussed in section 1.2.

Each of these zones was considered to have distinct open space settings and associated recreation opportunities. These settings, according to the ROS assessment method influence the type of recreation activity that takes place within that particular area and subsequently affects the overall experience, which in turn impacts on people's decision to return to an area. This process subsequently provided a tool for assessing the three recreation zones overall, for their relative regional context and level of significance.

The recreation zones as shown in Figure 2.0 are:

Upper Scheme Area (Recreation Zone 1)

This includes the dam footprint and the upper Makaroro river catchment. It includes Wakarara Road End (just below the historic mill site) which is a key access point into the recreation activities of the upper Makaroro. It also provides informal access to the Pan Pac forest and the Department of Conservation area known as the 'Wakarara Block', an important hunting area.

This area is characterised by commercial forestry, the braided river corridor of the upper Makaroro, extensive areas of native bush, and sections of river gorge both in the dam footprint and upper reaches of the Makaroro river In terms of recreational setting this area comprises 'rural natural', 'semi primitive' and 'primitive' settings.

Downstream River Corridor (Recreation Zone 2)

This includes the length of river between the dam and the upstream water intake on the Waipawa river (approximately 22 kilometres in length). While the surrounding area is typically rural, the braided river corridor itself offers a more 'rural-natural' setting.

Water Distribution Network (Recreation Zone 3)

Early in the assessment it was confirmed that the features related to the proposal in this 'recreation zone' would not to be available to the public. It is for this reason that any potential recreation activities associated with this 'recreation zone' have not been considered within this report. 'Recreation zone' 3 was subsequently omitted from further assessment. The restrictions on access to the water distribution network will be applied through the relevant designation.

The exception to this relates to the Zone M primary distribution system as explained in EMS (May 2013a). The Scheme now includes a concept that potentially has some key benefits for recreation in Central Hawke's Bay area of Otane and Waipawa. This is discussed in more detail in section 3.2 of this report.

It is acknowledged that detailed research into the recreation attributes associated with Zone M have not been undertaken within this assessment, except as to note that according to the PD currently the Papanui Stream has undesirable nutrient flows, low flows and lack of amenity thus contributing to its undesirability. A site visit undertaken on the 6th March confirmed visually the general degraded nature of the current environment. Through the Application Design it is proposed to improve the instream ecology, general amenity and may also '*provide recreation opportunities, such as developing a walking/cycling path, linking the settlements of Otane and Waipawa at the edge of the new riparian margins along a portion of the Papanui Stream, subject to engagement and approval by with landowners'*.

For the remainder of the analysis, the Scheme area refers only to 'recreation zone' 1 'recreation zone' 2 and Zone M.

2.2.3 Recreation Activity/Opportunity Analysis

An assessment of each of the known recreation activities occurring within each 'recreation zone' was undertaken. For 'recreation zone' 1 this included; tramping/hiking, hunting, fishing, day visits, mountain biking, kayaking and visits by private recreation organisations and groups. Because 'recreation zone' 1 comprises the proposed dam and reservoir, an analysis of the 'potential recreation opportunities' was also undertaken. For 'recreation zone' 2 the assessment included; fishing, day visits, kayaking and four wheel driving.

Information pertaining to each activity/opportunity was obtained from the range of sources outlined in section 2.1 above. The assessment identified the nature of the recreation activity currently occurring in the Scheme area; type of user, numbers of users, frequency of visitation, potential change in users as a result of the Scheme, potential mitigation and opportunities as a result of the Scheme.

Once each of the recreation activities within each 'recreation zone' was assessed, an overall assessment of recreation activities and opportunities in the Scheme area relative to those available in the wider Hawke's Bay region was undertaken.

Conclusions regarding the potential effects of the Scheme on recreation activities in 'recreation zone' 1 and 'recreation zone' 2 were summarised in terms of their significance, scale and potential beneficial outcomes:

1) The significance of the recreational activities potentially affected by the Scheme was identified – whether locally, regionally or nationally significant.

2) Individual activity effects were then assigned a point along an 'effects scale' as adapted from another similar study (Opus International Consultants Limited, 2011) as the basis for considering how mitigation might increase positive effects or shift negative effects into a positive or neutral effect on the scale. Potential mitigation was identified for each recreation opportunity. The scale of effect of the proposal on individual recreational activities and opportunities **prior to mitigation** has been identified as either:

   - *Major Positive Effect*
   - *Minor Positive Effect*
   - *No Effect Identified/Neutral*
   - *Unable to Quantify Effect*
   - *Minor Adverse Effect*
   - *Significant Adverse Effect*

Figure 5.0: Assessment scale

-- Significant Adverse Effect	- Minor Adverse Effect	? Unable to Quantify Effect	O No Effect Identified/Neutral	+ Minor Positive Effect	++ Major Positive Effect

3) Any potential beneficial outcomes of the development for recreation.

2.2.4 Conclusions and Recommendations

Conclusions regarding the relative significance of recreation activities currently occurring in the Scheme area and the potential impacts on these recreation activities as a result of the Scheme were drawn from the analysis above.

Recommendations were also made regarding the most appropriate measures to address any significant effects identified.

2.3 Analysis of Recreation Activity/ Opportunity

2.3.1 Recreational Activities Currently Undertaken in the Scheme Area

The information describing each activity in this section of the report has been drawn from a number of sources including site visits (observational study), stakeholder interviews, and the internet and literature sources. Each of the activities is discussed in their local recreation context and also in terms of how they fit within a wider regional recreation context.

Of particular note, the Ruahine Forest Park was gazetted in 1976 and its primary functions became recreation, conservation and watershed protection (Department of Conservation, East Coast Hawke's Bay Conservancy, 2005).

Upper Scheme Area (Recreation Zone 1)

Tramping/Hiking – From discussions with representatives of the Heretaunga Tramping Club (Hastings) and Forest and Bird (Napier, Hastings and Central Hawke's Bay branches) as well as a web search and literature review, the proposed Upper Scheme Area currently provides the key access points for a number of popular tramping tracks in the area ranging from steep direct access to the top of the ranges, riverbed routes and easy low level walks. The tracks primarily accessed from the Wakarara Road End (Historic Mill Site) are:

- Yeoman's Track/Murderer's Hut, aka Ellis Hut (also a popular mountain biking track as discussed further below). Estimated to take approximately 3.5 to 4.5 hours, this walk is considered by the Heretaunga Tramping Club to be a 'mid-range' walk. It is a 'gentle low level forest walking track following an old route where logs were once hauled to Yeoman's Mill (Department of Conservation, East Coast Hawke's Bay Conservancy, 2005). It also has some historic value with the Ellis Hut (Murderer's Hut) constructed in 1884 being the oldest surviving hut in the park. The Heretaunga Tramping Club's assessment of visitors to the Yeoman's Track (on an organised basis) is that of approximately 50 people using the track per annum.

- Barlow Track/Barlow Hut. Estimated to take 2 - 3 hours this track is considered to be a 'mid-range' walk. There is an 8 kilometre route up the riverbed from the Road End to reach Barlow Hut. From the hut there is a 1.5 kilometre connecting track to the Colenso Spur Track. It is also possible to reach the Upper Makaroro Hut from this track.

- Colenso Spur Track. Estimated to take 4 - 5 hours this track is considered to be a 'mid-range' walk. This walk commences at the main stream confluence at the point at which a stone war memorial cairn is located in memory of the missionary William Colenso. Hence this walk has some historic value.

- Pohatuhaha Ridge Track. This is considered to be a 'route track' suited more towards the experienced trampers.

- Gold Creek Hut. Estimated to take 3 - 4 hours, this track is suited more towards experienced trampers. According to the pamphlet titled 'Eastern Ruahine Forest Park' (Department of Conservation, East Coast Hawke's Bay Conservancy, 2005) from the Makaroro River at its confluence with Gold Creek, a track starts on the true right of Gold Creek and follows a long gentle ridge through beech forest with horopito undergrowth. It turns right and descends to the hut which is on the true left of Gold Creek.

Photograph 1: Interpretation Panel at Wakarara Road End displaying tramping tracks and huts in area

According to the pamphlet titled 'Eastern Ruahine Forest Park' (Department of Conservation, East Coast Hawke's Bay Conservancy, 2005) many of the area's huts and

tracks were built for deer cullers by the former New Zealand Forest Service and are used today by recreational hunters and trampers.

The tracks in the study area fit within a large network of tracks in the Hawke's Bay, with one of the most recognised and popular tramping tracks, being that of Sunrise Hut, located a short distance from the Scheme area.

According to the Department of Conservation there are other similar tracks in the Hawke's Bay (with the Sunrise Hut Track being a primary example) that are more frequented than the tracks located (or accessed from within) in the Scheme area. Also according to the Department of Conservation it is the more experienced trampers who primarily access the Wakarara Road End tracks. The statement made in the Eastern Ruahine Forest Park Pamphlet (Department of Conservation, East Coast Hawke's Bay Conservancy, 2005) is consistent with this observation made by the Department of Conservation that tramping in the area is for experienced trampers or visitors with good levels of fitness only.

The Heretaunga Tramping Club indicate that as many as 20 of their members visit this area up to twice a year which is considered to be typical of their visits to other areas in the Forest Parks.

According to Stephen Wilson (the land owner residing closest to the Wakarara Road End which is the closest entry point for the tramping tracks outlined above), approximately 3000 – 4000 recreationalists access the Wakarara Road End each year. There is no data on visitor numbers across the Park however based on anecdotal evidence it is considered that this recreation area has low to medium usage for tramping. It is less visited than Sunrise Hut and other regionally significant outdoor recreation destinations (Cape Kidnappers, Te Mata Peak, Tuatara Country Park for example) however it is valued for its range of tramping opportunities including its more challenging tracks. Similarly, origin of visitors is not documented, however based on Heretaunga Tramping Club, Forest and Bird, Department of Conservation consultation, and the Barlow Hut Visitors Book it seems that visitors are mainly from the Hawke's Bay (Waipukurau/Waipawa, Hastings and Napier). Based on this evidence it is concluded that the Makaroro River area offers a regionally valued tramping opportunity.

It is important to note that it is not the tracks themselves that would be lost through the Scheme, but the access (and to a limited extent, the start of the tracks) to these tracks that will be affected by the dam footprint.

It is noted that HBRIC's Proposed Integrated Mitigation and Offset Approach (May 2013f) identifies (Section 3.1.2):

- Funding for the creation of walking/cycling tracks around the reservoir, where landowners are amenable; and

- Construction of an access track around the top-end of the reservoir, linking to existing DOC tracks in the Ruahine Forest Park via Makaroro Road.

This report identifies that on-going management of this infrastructure will be overseen by HBRC or the Department of Conservation where agreements are put in place for such.

These measures to preserve access to existing recreational activities in the area and enhance this through additional provision of walking/cycling opportunities will be requirements of proposed consent conditions.

Local and Regional Significance Summary	- This is a valued regional recreation opportunity for more experienced users; similar opportunities are available elsewhere in the region. - Effects prior to mitigation are limited to access to tracks in the upper catchment which have high values for a range of recreational opportunities.

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Significant Adverse Effect	**Minor Adverse Effect**	**Unable to Quantify Effect**	**No Effect Identified/Neutral**	**Minor Positive Effect**	**Major Positive Effect**

Hunting – According to DOC (Department of Conservation, East Coast Hawke's Bay Conservancy, 2005), red deer were released into the northern Ruahine Range in 1883 for game hunting and appeared in the southern ranges in the mid 1920's. Their numbers increased to the point that they caused considerable damage to the environment and subsequent government culling began.

DOC have identified that the main species of deer in the Ruahine Forest Park today are red deer which are common throughout. Some sika and pigs are also present in low numbers. Hunting areas include a combination of bush, slips and open tussock tops.

Forest and Bird representatives have commented that hunters are regularly seen accessing the Ruahine Ranges from the proposed reservoir footprint area (in a similar location to where the trampers access the tracks at the Wakarara Road End). The Barlow Hut Visitors Book (viewed on the 21 December 2011) also provides evidence of hunters accessing the hut on a periodic basis. The visitor's book was commenced on the 26 February 2011 and 6 hunters had written in the book. Planned hunting routes recorded in the visitor's book were:

- *'Downstream'* of Barlow Hut
- *'Heading down Gold Creek'*
- *'Carry on up the river and head up one of the side ridges'*
- *'Out via river, car at Gold Creek'*
- *'Out via river'*
- *'Back down river'*

It is evident from the comments left in the visitor book that the majority of hunters were from the Hawke's Bay region and were using the river as their main hunting route. In contacting the Hastings Deerstalkers Association is evident that the Scheme would significantly affect hunters (without alternative access being provided) and it is the loss of access to key hunting areas that is the key concern.

Further discussion with representatives of Pan Pac Forest Products Ltd clarified that the 'block' of forestry abutting the dam footprint area, approximately 450 ha and shown on the map attached as Appendix 4, is frequently occupied by legitimate hunters. Hunters occupying this 'block' obtain a permit through Pan Pac Forest Products Ltd between the months of May – December (inclusive) and access the 'block' via the forestry roads from its northern end (Ellis Road). In 2011 65 hunting permits were issued for this 'block' (a maximum of one permit is issued per day on the weekends, i.e. one permit on the Saturday and one permit on the Sunday).

According to representatives from Pan Pac Forest Products Ltd, a further 176 hunting permits were issued to the other 11 available 'blocks' (other available 'blocks' comprising of a total of 8050ha) in the forest during that same period between May – December 2011 (inclusive). This comparison of forest 'block' usage by hunters provides an indication that hunting on the 'block' of land adjacent to the dam/reservoir footprint area is relatively popular for hunters.

A key issue for Pan Pac Forest Products Ltd is illegal hunting of their 'blocks' of forestry. It is considered that the development of the Scheme may deter some of the illegal hunters from accessing the forest 'blocks' from the Wakarara Road End, which is (according to Stephen Wilson and representatives of Pan Pac Forest Products Ltd) a popular access point.

DOC also advise that access to a small conservation area managed by them, popular with hunters, known as the 'Waka's' occurs via the Wakarara Road End and private forestry tracks (including access across a forestry bridge over Dutch Creek). This access to the 'Waka's' will be affected by the Scheme. As with tramping/hiking opportunities above HBRIC's proposed Integrated Mitigation and Offset Approach (May 2013f) identifies mitigation measures to address the issue of access.

In summary, the dam footprint area and immediate surrounds is frequented by a range of hunters. The value of their experience will not be significantly impacted and the dam may even provide a positive benefit in terms of Pan Pac Forest Products Ltd management and policing of usage. The proposed measures for alternative access identified in the PD appendix A Drawing DA-105 and provision in Project A Ruataniwha Reservoir Restoration Buffer and Catchment Enhancement Zone of the Proposed Integrated Mitigation and Offset Approach (May 2013f) will ensure access to the 'Waka's' is retained.

Local and Regional Significance Summary	- This is a popular hunting spot for Hawke's Bay residents. - Other opportunities exist elsewhere in the Region. -Effects on hunting recreation opportunities prior to mitigation appear to be limited to access.

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Significant Adverse Effect	Minor Adverse Effect	Unable to Quantify Effect	No Effect Identified/Neutral	Minor Positive Effect	Major Positive Effect

Fishing – According to Fish and Game Hawke's Bay, this recreation area is fished by some local Hawke's Bay residents although it is the Tukituki River catchment that has the greatest trout fishing values. The pamphlet titled 'Eastern Ruahine Forest Park'

(Department of Conservation, East Coast Hawke's Bay Conservancy, 2005) also notes that trout can be found in some rivers around the Eastern Ruahine Forest Park. Craig Preston (local landowner) suggests however that following Cyclone Alison which struck parts of New Zealand in March 1975, there have been minimal sightings of trout in the reaches of the Makaroro River and its tributaries.

The Draft River Values Assessment System (RiVAS) Report for salmonid angling, although limited in terms of reliable local data, provides one of the most informative assessments for recreational angling, currently available, and supports the claim that the Makaroro River is of 'low' value for salmonid angling. In this report is recorded that the Makaroro River has 25.73 angling days per annum. When compared with the Waipawa River (another Tukituki River tributary) which has 1315.2 angling days per annum it is evident that the Makaroro has considerably fewer angler days and therefore it can be assumed is of less overall value as a fishing resource.

Cawthron (May 2013) suggests that there is fishing opportunity in the upper reaches of the Makaroro River but due to limited access is not a popular area. For those that do visit this area however, it is valued because of its remoteness. The Makaroro River is valued by anglers who do fish here for its early season fishing (October-November) for post spawned trout. The upper reach above Gold Creek is the most favoured area and Dutch Creek in the first weeks of the fishing season provides good fishing. Fish caught are generally in poor to average condition as they are still recovering from spawning. The Report notes some disparity in perception of the Makaroro River for angling, some believe it to be average while others consider it exceptional due to its small stream nature, low angler numbers, high scenic values, easy access and (sporadically) high catch rates.

River fishing within the dam footprint will be affected as a result of the Scheme. According to Cawthron (May 2013) a trout population of between 1000-2000 adult fish is likely to develop in the reservoir and support a full season fishery for small rainbow trout, rather than the current early and late season fishery for post- or pre- spawning rainbow trout of average size.

The movement of fish, both upstream and downstream, past the dam will be affected by the presence of the dam (Cawthron May 2013). However, with the recommended trap and transfer fish relocation system in place migratory native fish will still be able to access habitat upstream of the proposed dam.

Although it is likely that some juvenile trout will successfully pass downstream through the turbines or over the spillway and make a contribution to the fishery in the Waipawa and Tukituki Rivers, there remains some uncertainty about whether sufficient juvenile trout will pass downstream to fully offset the inundation and loss of spawning habitat.

In summary, while fishing in this zone will be affected by the proposal there is opportunity to create an alternative fishing experience within the reservoir environment with recommended measures being taken to ensure fish passage.

The RFERP also provides opportunity for associated structures such as reservoir access to be incorporated into the final design of the reservoir.

We also note that HBRIC's Proposed Integrated Mitigation and Offset Approach (May 2013f) provides for construction of a boat ramp for public recreation access to the reservoir and a fisherman's shelter for use by trout anglers.

Local and Regional Significance Summary	- The Makaroro River is considered to be a regionally low value fishing River. - Other opportunities exist elsewhere in the Region. - Effects to current fishing activities will be such that the stretch for Makaroro River that lies within the dam footprint will be adversely affected. The implementation of alternative fishing opportunities could offset this adverse effect.

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Significant Adverse Effect	**Minor Adverse Effect**	**Unable to Quantify Effect**	**No Effect Identified/Neutral**	**Minor Positive Effect**	**Major Positive Effect**

Day Visits (and associated activities such as nature/ bird watching and picnicking)

'Recreation zone' 1 is considered to be a primitive/ semi-primitive ROS setting whereby nature/ bird watching experiences are more likely to exist.

There is a range of rare, including threatened, flora and fauna within the reservoir area (Kessels and Associates (May 2013)). These known features, as well as the variety of historic interest points such as the Historic Mill Site at the Wakarara Road End area are likely to contribute to its value as a passive day visitor area. The areas proximity to the Makaroro River for swimming is also a significant attribute for day visitors.

Photograph 2: Historic Mill Site – Interpretation Panels

Photograph 3: Scenic Route

Unfortunately visitor numbers to this area are neither recorded by the Department of Conservation who have an arrangement to occupy the area, or the landowner.

Feedback from, local landowner Stephen Wilson suggests that the 'Historic Mill Site' and surrounds is visited on a frequent basis for picnicking and general day visitors. According to Stephen, the area is often visited by people who previously worked at the Mill Site or had some other affiliation with it.

Of note, a possible explanation for the frequency of visitors to the Wakarara Road End and surrounds is the presence of 'Heritage Trail' signage in the area and the inclusion of the

historic Yeoman Sawmill (Heritage Trails) as a feature on the Heritage Trail for State Highway 50 Central Hawke's Bay. Evidence of the presence of visitors to the area was also noted during the site visits undertaken by the project team (both camp fire remains and some litter from picnic activities).

It is noted that in HBRIC's Proposed Integrated Mitigation and Offset Approach (May 2013f) that in consultation with affected landowners and iwi, provision is made within Project A: Ruataniwha Reservoir Restoration Buffer and Catchment Enhancement Zone for construction of a new picnic/ camping area featuring historical/cultural information about the Yeoman Mill site and surrounding landscape.

Local and Regional Significance Summary	-There are a number of road end opportunities in the District that provide similar recreation opportunities however the unique features of the Wakarara Road End, such as the Historic Mill site and the close proximity of known habitat for rare fauna, give this area regional recreation value in terms of day visitation. -Effects are that the Historic Mill site will be lost and some current habitat for significant fauna may be lost meaning that the heritage and nature/ bird watching experience may also be affected. The scale of effect of the proposal on individual recreational activities and opportunities prior to mitigation has therefore been identified as a significant adverse effect.

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Significant Adverse Effect	Minor Adverse Effect	Unable to Quantify Effect	No Effect Identified/Neutral	Minor Positive Effect	Major Positive Effect

Camping - In addition to the day visitors, the Parks Peak Station also hosts a private camping ground which is located within the dam footprint. According to Stephen Wilson, the landowner and campsite operator, approximately 300 – 400 people stay at the camping ground per annum with the primary method of advertising the camping ground being word of mouth. The camping ground has an ablution block and running water for its users. There is also a river access point from this camping ground.

Photograph 4: Ablution Block and surrounds – Parks Peak Station Camping Ground

From a web search of registered camping grounds (Jasons, 2012) it was noted that there were 13 located in the Hawke's Bay alone. Notably it appeared that only one other camping ground in the Hawke's Bay region and registered on this website, provided the 'rural natural'/ 'semi primitive' setting (the setting considered to be applicable to 'recreation zone' 1 and the camping ground site). Furthermore the existing camping ground is easily accessible to Waipawa and Waipukurau and within 90 minutes of Napier and Hastings. Arguably the camping ground is of regional significance given that similar experiences can only be replicated in three other settings in the Hawke's Bay. The other DOC sites offering

similar opportunities are Glenfalls (Mohaka), Everitts (Mohaka) and Ngaruroro – Kuripapango.

Currently the camping ground provides more of a wilderness setting. The camping ground is located within the proposed dam footprint and therefore the experience will be lost. There may be opportunities to relocate the camping ground so that it is adjacent to the dam edge. Relocation of the camping ground may provide a positive change as near-water sites are typically in demand over the summer period (Environmental Managment Services Limited, 2007).

Development of a reservoir in this location could also provide opportunity for an alternative near-water type of camping experience to complement other recreation activities in the area, as is consistent with the objectives of the RFERP. Any such opportunities will need appropriate signage and information to make users fully aware of the managed reservoir environment and any potential risks to users. This is supported by proposed conditions referencing adherence to the Dam Safety Guidelines but it is important that in addition to safety signage appropriate recreation signage is in place to ensure users are fully informed of risks and opportunities associated with the reservoir.

It is noted that in HBRIC's Proposed Integrated Mitigation and Offset Approach (May2013f) that in consultation with affected landowners and iwi, provision is made within Project A: Ruataniwha Reservoir Restoration Buffer and Catchment Enhancement Zone for construction of a new picnic/ camping area featuring historical/cultural information about the Yeoman Mill site and surrounding landscape.

Local and Regional Significance Summary	-The camping ground will be affected with the development of the dam, however there may be opportunities to provide more of a near-water camping ground experience by relocating the facilities (which are in demand over the summer period). -Other camping opportunities exist elsewhere in the Region. -The proposal could provide opportunity for an alternative near-water camping experience to that offered currently.

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Significant Adverse Effect	Minor Adverse Effect	Unable to Quantify Effect	No Effect Identified/Neutral	Minor Positive Effect	Major Positive Effect

Mountain Biking – The Yeoman's Track is a popular mountain biking facility, and the only DoC maintained mountain bike track in the Hawke's Bay. It is considered to be an easy grade in terms of mountain biking grades (Department of Conservation, 2012) and while potentially suitable for family use general access is restricted by the need to cross the Makaroro River before starting according to the Hawke's Bay Mountain Bike Club (HBMBC).

It takes approximately 45 minutes by mountain bike from the Wakarara Road End to Ellis Hut and 30 minutes return along the Yeoman's Track.

Yeoman's track is the only mountain biking track on DoC land and for this reason HBMBC consider it to be unique. From a web search it was also recorded that the Yeoman's Track

is identified as an important facility for mountain bikers regionally (Hawke's Bay Mountain Biking, Unknown).

Mountain biking is growing in popularity and there is a demand for tracks. HBMBC is one of the largest clubs in New Zealand and membership is growing. Demand for mountain bike tracks is therefore likely to increase rather than decrease in the future. Currently the main regional mountain biking opportunities are available at Pan Pac Eskdale Mountain Biking Park, Pan Pac Aropaoanui Down Hill Park, Pukeora Hill Mountain Biking Park with some tracks also available at Te Mata Peak Park. The lack of secure long term access for mountain biking is an issue for this activity and there is on-going negotiation between HBMTBC and DoC for use of crown land for this purpose. For this reason the Yeoman's Track is particularly valued.

Access to Yeoman's Track is the on-going issue for mountain bikers. It is noted by HBMBC that the current access (having to cross the Makaroro River) limits it to keen bikers only. Concerns have been raised by the Club that the Application Design will mean the complete loss of access to Yeoman's Track.

We note that there is provision for new walking and cycling opportunities in HBRIC's Project A: Ruataniwha Reservoir Restoration Buffer and Catchment Enhancement Zone (HBRIC (May 2013f). These will enable better connections to Yeomans Track to be developed.

Local and Regional Significance Summary	-The use of Yeoman's Track for mountain biking is less than other facilities but the opportunity is considered significant as it is the only mountain bike track on DoC land and the nature of it is such that it is unique for the Region. -Other opportunities exist elsewhere in the Region but mainly on privately owned forestry land. -Effects to Yeoman's Track prior to mitigation are loss of access.

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Significant Adverse Effect	Minor Adverse Effect	Unable to Quantify Effect	No Effect Identified/Neutral	Minor Positive Effect	Major Positive Effect

Four Wheel Driving – The Hawke's Bay Four Wheel Drive Club were contacted as part of the recreation assessment. The Club currently have 40 members and on average visit the study area one to two times per year. They sometimes use the dam footprint area for club events, either on the river bed or on adjoining properties. In addition, it was observed during the site visits that the river corridor was frequently used by four wheel drive vehicles.

The Club consider the area to be significant in that it is one of the few challenging areas in Hawke's Bay suitable for use in the summer. The Club access the true left area of the proposed dam footprint at the Wakarara Road End, and occasionally from Smedley and Gwavas Forest.

The Club consider that access to, and the ability to undertake four wheel drive activities in this area is significant given that more and more of the 'similar' areas are being lost to the

sport through increasing perception by landowners of the significance of liability issues and the changing land use in the area.

The only way to mitigate the effect of losing this activity as a result of the Scheme is to provide a similar four wheel driving experience elsewhere in the Region. Currently the only other public four wheel driving opportunity in the Ruahine Ranges is north of this site (access from Big Hill Road) (Department of Conservation, East Coast Hawke's Bay Conservancy, 2005).

Local and Regional Significance Summary	-Recreation zone 1 is unique for the Hawke's Bay Four Wheel Drive Club in that it provides one of the few challenging four wheel driving areas in Hawke's Bay, suitable for use in the summer. -For the reasons stated above it is considered that the area provides a regionally significant four wheel driving opportunity. -The provision of alternative river based four wheel driving opportunities would mitigate the loss of this recreation activity.

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Significant Adverse Effect	Minor Adverse Effect	Unable to Quantify Effect	No Effect Identified/Neutral	Minor Positive Effect	Major Positive Effect

Kayaking – According to the Draft RiVAS White Water Kayaking Report (Reed, 2010) the reach of the Makaroro River between the end of Wakarara Road and the confluence with the Waipawa River, has been identified as containing river reaches that are able to be kayaked, and has a white-water difficulty grading of 2. The international scale of white-water difficulty (Charles 2006: 14-15) describes Grade 2 as "easy rapids with waves up to one metre. Clear channels obvious without scouting. The ability to move your craft across the current is not necessary". In terms of number of users, it is estimated as likely less than 100 kayaker days per year.

Overall, while this reach of the Makaroro River is identified as valued for white-water kayaking in Hawke's Bay, it is ranked towards the bottom of the list of the 32 rivers and river reaches identified, with a river kayaking value of 'low'.

In terms of regional comparison, examples of reaches assessed to have 'high' value for white-water kayaking in Hawke's Bay include a number of reaches on the Mohaka River (such as Te Hoe confluence to Willow Flat), Ngaruroro River (such as Boyds to Kuripapango), Ruakituri River (above Mangatahae Stream) and the Waikaretaheke River (between Piripaua and Terapatiki).

The findings of the Reed report however conflict with the local observations of the area whereby local landowner Stephen Wilson, has observed that there are virtually no kayakers who access the Macaroon River from the Wakarara Road End. Further justification of the local observation of low kayaker use is the White Water New Zealand website which identifies rivers of significance for white water sports and contains information on 307 sections in 185 rivers. Neither the Tukituki, Waipawa nor Makaroro are cited in this directory.

Local and Regional Significance Summary	-The Makaroro River is not used frequently by kayakers and is of low kayaking value even though it is classed as a Grade 2 rapid. -Other Grade 2 opportunities exist elsewhere in the Region. -Kayaking will be affected in 'recreation zone 1'.

-- Significant Adverse Effect	Minor Adverse Effect	? Unable to Quantify Effect	O No Effect Identified/Neutral	+ Minor Positive Effect	++ Major Positive Effect

Water Sports (water skiing, rowing and jet boating) – Communication with known water sports groups was undertaken where possible to understand any current water sport provision in the Hawke's Bay in relation to the potential opportunity created by the Scheme.

The Central Hawke's Bay Water Ski Club (CHBWSC) was contacted regarding the current water ski provision in the Hawke's Bay area. In 2012, according to Michael Harding, secretary of the CHBWSC and an article published in the Hawke's Bay Today on the 14th February 2012 (Hawke's Bay Today, 2012), a new purpose built lake called Backpaddock Lakes has recently been opened for water skiing activities. According to (Hawke's Bay Today, 2012) the lake will be primarily used for water skiing and wakeboarding. It is 730m long and 250m wide and is capable of holding international water sports events. The closest equivalent is Taupo or Rotorua.

When asked about the benefit of the proposed Ruataniwha dam for water skiing activities, Michael Harding commented that the new Backpaddock Lakes would provide sufficient and suitable provision for water skiing and given that slalom courses for water skiing are highly sensitive and prone to getting damaged by other water sports, this was likely to be the most suitable venue. He therefore considered that there was unlikely to be a demand for additional occupancy by this recreation group at the Ruataniwha dam should the proposal proceed. Instead it was suggested that the Ruataniwha might be more suited to rowing and wake boarding activities. This does not mean however that that the reservoir itself, is not suitable for waterskiing, rather that there will be limited demand from this group.

Accessible flat water opportunities are limited in the Hawke's Bay with the only other suitable major lake being Lake Tutira approximately 30 minutes' drive north of Napier. The use of motor boats is prohibited on this lake and therefore there is likely to be potential demand from other motorised boat users for access to the Ruataniwha Dam. At this stage however there has been no response to attempted consultation from any other groups to support this.

Local and Regional Significance Summary	-While there may be limited demand for waterskiing the dam may still provide opportunities for this. There is likely to be demand for other opportunities for motorised water sports (such as wake boarding and informal water skiing) particularly if public access is provided.

-- Significant Adverse Effect	- Minor Adverse Effect	? Unable to Quantify Effect	O No Effect Identified/Neutral	+ Minor Positive Effect	++ Major Positive Effect

Rowing - Hawke's Bay Rowing Club have been based at Farndon Domain on the Clive River since 1874. The current regional facility at Farndon Domain is limited in terms of area and water quality for hosting regional events. The proposed dam may present an opportunity for a regional rowing facility. Any proposals would need to be worked through with the Hawke's Bay Rowing Club to further understand if the proposed dam is a suitable location for this purpose and any design requirements if it is.

Local and Regional Significance Summary	-There is potential for a regionally significant rowing facility.

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Significant Adverse Effect	Minor Adverse Effect	Unable to Quantify Effect	No Effect Identified/Neutral	Minor Positive Effect	Major Positive Effect

Private Recreation Organisations and Groups

Camp Wakarara – Camp Wakarara is situated within close proximity of the Ruahine Ranges and Forest Park, with ready access to both the Waipawa and Makaroro River catchments.

Set in seven acres, the camp was set up as an Outdoor Education facility for schools. More recently it has been used by a wide variety of different interest groups. Contact with Camp Wakarara was attempted, however no correspondence was received. A review of the content of their website (Camp Wakarara, Unknown) showed that a range of different recreation pursuits are undertaken in the area with camp users. Activities include; orienteering, creek studies, fishing, tramping, walking, bush studies and outdoor cooking.

According to local land owner Stephen Wilson, the Camp's use appears to be declining over time with fewer visits to the Wakarara Road End and its associated walking tracks by its attendees as there was in previous years.

Takapau Scouts – The Takapau Scout group were referred to on several occasions during consultation, as users of the area. Communication with this group was attempted however no correspondence was received.

Access to the Wakarara Road End and associated tramping areas would be lost (without alternative access being provided) therefore reducing the ability of these groups to occupy the area. Given the relatively infrequent and declining use by these groups in recent times it appears that this effect is of low significance.

Improvements to recreational amenity at the dam edge could potentially increase usage of the area by educational groups such as the Scouts and Camp Wakarara.

Local and Regional Significance Summary	-Road End amenity will be affected for these recreational users. -There has been a decline in use of the area by private groups therefore the significance of effect is low. -There is an opportunity to increase usage of the area through provision of dam side enhanced recreational amenity.

-- Significant Adverse Effect	- Minor Adverse Effect	? Unable to Quantify Effect	No Effect Identified/Neutral	+ Minor Positive Effect	++ Major Positive Effect

Downstream River Corridor (Recreation Zone 2)

Fishing – The Waipawa River is considered to be a popular recreational fishing river for local Hawke's Bay residents. According to the Hawke's Bay Fish and Game website (Fish and Game Hawke's Bay , Unknown) *'The Waipawa River is very similar to the Tukituki river system, as it is a significant tributary to it. The Waipawa River is often lower during the summer months and the upper Waipawa especially; as it can be dewatered during the dryer months as it crosses the Ruataniwha Plains. This water however, is forced to the surface again as it hits the hard limestone of the Raukawa Range. This is why such streams as the Mangaonuku and Cochranes Creek are always flowing year round. So if you are heading above the Raukawa Range for a fish and it's too low, try a spot below it and it will almost be guaranteed that the river will be much higher'.*

Furthermore, the following table is taken from the Sports Fish and Game Bird Management Plan (Fish and Game Hawke's Bay, 2005) and further demonstrates that the Waipawa River is considered to be regionally significant in terms of fisheries values.

Table 2.0: Relative Significance of Hawke's Bay River's Fisheries by Catchment.

River/ Lake	Total use (days)	% of effort	Order	Significance
Mangaone River	366	.845	10	Regional
Waikoau River	370	.856	9	Regional
Mangaonuku Stream	562	1.299	8	Regional
Tukipo Stream	1047	2.420	7	Regional
Waipawa River	2016	4.659	6	Regional
Tutira Lake	2155	4.979	5	Regional
Ngaruroro River	5852	13.522	4	National
Mohaka River	6138	14.182	3	National
Tutaekuri River	6417	14.826	2	National
Tukituki River	16120	37.247	1	National
Region total	**43279**			

The RiVAS Report for Salmonid Angling (Booth K. L., 2011) concludes that of the Tukituki River tributaries, the Waipawa River has the greatest number of angling days per annum (1315.2 angling days). The Makaroro River has 25.73 angling days per annum. Although the Makaroro River is at the low end of the range for number of angling days for rivers in the Hawke's Bay Region, and generally has low and medium scores for the majority of the assessment criteria used in the RiVAS Report to determine overall significance, interestingly, it does score highly (score: 3) in terms of angler perception of scenic attractiveness. It also scores 'medium' in terms of angler perception of wilderness (score: 2).

The PD identifies that monthly mean flows below the dam footprint would be broadly more uniform throughout the year with flows substantially higher than present in summer months (October – April) and substantially lower in winter months (April, May and June). So, although the activity of fishing will not be lost, the nature of the activity will change in terms of flows.

Cawthron (May 2013) states there are three key water quality parameters; temperature, dissolved oxygen and nutrients/ phytoplankton which effect the presence of fish and invertebrates. Modelling undertaken predicts that changes in water quality associated with storage of water within the reservoir are expected to be relatively minor, resulting in a relatively minor impact on the activity if fishing in this regard. On-going monitoring and the installation of an aerator will manage any unforeseen changes in water quality.

It is noted that in HBRIC's Proposed Integrated Mitigation and Offset Approach (May 2013f) provision is made within Project B: Ruataniwha Riparian Enhancement Zone (River Halo Project) for the implementation of four biodiversity enhancement initiatives including enhancement of riparian habitats alongside the Makaroro and Waipawa Rivers.

Access to the River will be maintained via Burnt Bridge.

Given that the fishing experience will be varied and with some areas along the river itself being restricted for safety reasons (the water intake structures in particular), mitigation should include information and way finding for anglers.

Overall the activity of fishing in 'recreation zone 2' is likely to retain value post Scheme construction with recommended mitigation in place.

Local and Regional Significance Summary	- The Makaroro River is of low value for fishing. - The Waipawa River is of high value for fishing. - The effect of the proposal on fishing is likely to change however from the information available it appears that the opportunity to fish in 'recreation zone' 2 will remain.

--	-	?		+	++
Significant Adverse Effect	**Minor Adverse Effect**	**Unable to Quantify Effect**	**No Effect Identified/Neutral**	**Minor Positive Effect**	**Major Positive Effect**

Day Visits (and associated activities such as nature/ bird watching, picnicking and swimming) – From the site visits undertaken to the three public access points below the dam, along the Waipawa River (Burnt Bridge and Caldwell Road End), there was some evidence of vehicle access, which could be for fishing, swimming, kayaking access, or informal visiting however it is not possible to determine the extent of visitation to each of the access points. There was no evidence of camping at these sites. Public access to Burnt Bridge, Caldwell Road will not be affected.

Notably, 'recreation zone' 2 shifts along the recreation opportunity spectrum to a rural natural setting (whereas 'recreation zone' 1 was more of a semi primitive setting). The rural natural setting lends itself less to nature/ bird watching experiences and more to rural farming type experiences. 'Recreation zone' 2 is a more rural setting and similar to settings along other braided rivers in the Hawke's Bay (Ngaruroro River and Tukituki River). Many of these settings are available closer to the urban areas.

In terms of recreational swimming, very little mention was made of this recreation activity throughout consultation. The RiVAS report for swimming however suggests that the area under the bridge on the Makaroro River is included in the list of identified swimming sites of local and regional significance for Hawke's Bay.

Furthermore, according to the RiVAS Report for Swimming (Booth K. B., 2010), the Makaroro River swimming site scores 'high' for scenic attractiveness (score: 3), 'medium' for water clarity, variable water depth, algae compliance, and level of use (score: 2), but 'low' for swimming hole depth and the presence of facilities (score: 1), giving an overall 'medium' local and regional significance for swimming. For regional comparison, examples of swimming sites assessed to have 'high' significance in Hawke's Bay include the Ngaruroro River at Kuripapango, the Mohaka River at Te Puia Hut, the falls at Maraetotara, and the Sunshine Falls at Boundary Stream.

The Hawke's Bay Regional Council regularly monitors the water quality of what it considers to be popular swimming spots. Among those regularly monitored swimming spots are the Tukituki River at Black Bridge and also the Tukituki River at Waipukurau, according to the Hawke's Bay Regional Council website (Hawke's Bay Regional Council , Unknown). The swimming spots located in the Scheme area are not monitored.

Local and Regional Significance Summary	-Day visits to 'recreation zone 2' for picnicking and amenity are replicated elsewhere in the Region, closer to urban areas. -The Makaroro River (in 'recreation zone 2') is of medium value for swimming. -The activity of swimming is unlikely to change in 'recreation zone 2'.

--	-	?	0	+	++
Significant Adverse Effect	Minor Adverse Effect	Unable to Quantify Effect	No Effect Identified/Neutral	Minor Positive Effect	Major Positive Effect

Four Wheel Driving – From the site visits undertaken to the Waipawa and Makaroro Rivers below the dam footprint it is evident that Four Wheel Drive vehicles access the rivers in 'recreation zone 2' however it is not understood how regularly this occurs.

It is noted however that opportunities exist along the wider Tukituki river bed and other rivers in the region that are closer to the urban area of Waipawa/ Waipukurau and Napier/ Hastings and that the Scheme area river bed for four wheel driving is not unique.

In addition, the Hawke's Bay Four Wheel Drive did not refer to this area for their regular club activities.

Local and Regional Significance Summary	**-**The activity of four wheel driving will not be significantly impacted by the proposal in 'recreation zone 2'.

-- Significant Adverse Effect	- Minor Adverse Effect	? Unable to Quantify Effect	O No Effect Identified/Neutral	+ Minor Positive Effect	++ Major Positive Effect

Kayaking – As kayaking occurs across both 'recreation zone' 1 and 'recreation zone' 2 the discussion regarding kayaking in 'recreation zone' 1 above also applies to this section.

Of note however, there will be a change in river flow dynamics below the dam head. The PD identifies that monthly mean flows below the dam footprint ('recreation zone' 2) would be broadly more uniform throughout the year with flows substantially higher than present in summer months (October – April) and substantially lower in winter months (April, May and June). Proposed conditions (WP120371M (Makaroro Dam, Take and Diversion) Environmental Flows, conditions 5-9) propose a specific management approach the release of these flows based on certain environmental conditions triggering flow release. The nature of these triggers mean notification opportunity to kayaking organisations is limited. Therefore no kayaking opportunity as a result of this proposal is likely.

Local and Regional Significance Summary	-The Makaroro River is not used frequently by kayakers and is of low kayaking value even though it is classed as a Grade 2 rapid. -Other Grade 2 opportunities exist elsewhere in the Region. -Kayaking will not be lost in 'recreation zone 2' however the nature of the river flows may change. Access to the upper reaches of it will be affected.

-- Significant Adverse Effect	- Minor Adverse Effect	? Unable to Quantify Effect	O No Effect Identified/Neutral	+ Minor Positive Effect	++ Major Positive Effect

Water Distribution Network (Zone M)

The addition of the Zone M distribution system concept into the Application Design occurred at the late stages of the assessment. For this reason an assessment of recreation value is restricted to analysis of the information contained in the PD and Zone M Primary Distribution and Concept Review and Assessment (EMS (May 2013a), a site visit undertaken on the 6th March 2013, a review of Central Hawke's Bay District Council's Walking and Cycling Strategy, and discussion with Graeme Hansen of Hawke's Bay Regional Council in his capacity working on River Access Development around the region in previous years.

General Recreation Effects - Walker Road – From a site visit the Walker Road End showed evidence of reasonably intensive use by motor-vehicles for public access. Signage indicates the area is a known fishing access point. Evidence of bonfires and less desirable behaviour such as shooting at signage was also evident. While this access point will not be affected by the Application Design, the wider river environs for recreation purposes may be affected by the location of the downstream water intake structure north of the Walker Road End public access point. Public access to the water intake structure is only possible by walking/ driving some distance upstream from the Walker Road End.

Photograph 5: Entry to Walker Road End

Hawke's Bay Regional Council led the development of a range of river access points some years ago which included the Walker Road End. Developments can be seen in Photograph 5. Discussion with Graeme Hansen, who was involved in this river access development project some years ago, confirmed that the Walker Road End public access area is unlikely to be affected by the proposed works. '*The intake structure is located a considerable distance from the Walker Road End public use/ access area, and with good fencing and signage there are unlikely to be any implications for recreation users*' (pers com).

With appropriate measures to secure and restrict access to the downstream water intake structure itself from within the river environment (the only public access point to the intake structure) there are unlikely to be any effects on recreation in this area.

Local and Regional Significance Summary	-The effect of the proposal on general recreation activities are unlikely to be affected with appropriate measures to secure and restrict access to the downstream water intake structure.

--	-	?	0	+	++
Significant Adverse Effect	Minor Adverse Effect	Unable to Quantify Effect	No Effect Identified/Neutral	Minor Positive Effect	Major Positive Effect

Fishing - According to the Zone M Primary Distribution Concept Review and Assessment (EMS May 2013a) an assessment of the Stream Ecological Valuation ("SEV") was undertaken to assess the current ecological character of the Papanui Stream. The results show that the surveyed reaches of the stream are in poor ecological condition. Currently the Papanui Stream has undesirable nutrient flows, low flows and lack of amenity thus contributing to its undesirability.

Through the Application Design it is proposed to improve the **instream ecology**, general amenity of the Papanui Stream environment.

Local and Regional Significance Summary	- The effect of the proposal on fishing in the Papanui Stream is likely to be a positive one whereby fishing opportunities may be created as a result of the proposal.

-- Significant Adverse Effect	- Minor Adverse Effect	? Unable to Quantify Effect	O No Effect Identified/Neutral	+ Minor Positive Effect	++ Major Positive Effect

Walking and Cycling - Through the Application Design it is proposed to improve the instream ecology, general amenity and may also '*provide recreation opportunities, such as* ***developing a walking/cycling path, linking the settlements of Otane and Waipawa at the edge of the new riparian margins along a portion of the Papanui Stream, subject to engagement and approval by with landowners'***.

The development of a comprehensive off-road/ on-road cycling network in the Napier and Hastings areas in recent years has provided an important recreation opportunity in the region, and if implemented this concept has similar potential to enhance recreation opportunities in Central Hawke's Bay. The Central Hawke's Bay Cycling Strategy Review (2009) supports the development of cycling opportunities in Central Hawke's Bay and the proposals for Zone M are consistent with that.

Hawke's Bay Open Space Assessment[5] identified that Central Hawke's Bay has limited off-road cycling (mountain-biking) opportunities and also highlighted the opportunities associated with lineal access along river corridors and other strips of land. The proposal has the potential to improve off road cycling opportunities in the area that will meet the needs of learner/ recreational riders of all ages and therefore will address some of the shortfall as identified in that document.

Local and Regional Significance Summary	-The effect of the proposal on walking and cycling along the Papanui Stream is likely to be a positive one whereby walking and cycling opportunities may be created as a result of the proposal.

-- Significant Adverse Effect	- Minor Adverse Effect	? Unable to Quantify Effect	O No Effect Identified/Neutral	+ Minor Positive Effect	++ Major Positive Effect

Other Recreation Effects

Forest Park Access

The Ruahine and Kaweka Forest Parks, comprising approximately 160,000 hectares, provide a wide range of publically accessible recreation opportunities within 60 – 90 minutes drive from the regions main urban centres of Napier and Hastings.

The Forest Parks are an important regional recreational resource providing predominantly for tramping, fishing and hunting activities. These areas are remote, unspoiled, scenic and

[5] Environmental Services Limited, 2007

generally with good access (Department of Conservation, East Coast Hawke's Bay Conservancy, 2005) and (Department of Conservation, 2005).

The Scheme area includes one of a number of key access points to the Ranges and associated recreation activities. There is no linear road access along the Ranges therefore each vehicle access point only provides access to a discrete area of the park with limited area in which to recreate. Each of these access points are therefore considered to be regionally significant given the extent of the Ranges against the number of public access points currently available.

As noted previously, in HBRIC's Proposed Integrated Mitigation and Offset Approach (May 2013f) funding is allocated for the creation of walking/cycling tracks around the reservoir, where landowners are amenable; and construction of an access track around the top-end of the reservoir, linking to existing DoC tracks in the Ruahine Forest Park via Makaroro Road is also proposed.

Local and Regional Significance Summary	**-**Forest park access prior to mitigation will be significantly impacted by the proposal.

Significant Adverse Effect	**-** **Minor Adverse Effect**	**?** **Unable to Quantify Effect**	**O** **No Effect Identified/Neutral**	**+** **Minor Positive Effect**	**++** **Major Positive Effect**

3 Results of Assessment

Section 2.3 has identified current recreation activities and opportunities in the Scheme area and provided an insight into the significance of these opportunities in a regional context. The potential effects on the availability and quality of the activities and opportunities has also been considered. This section presents an overall summary of the analysis.

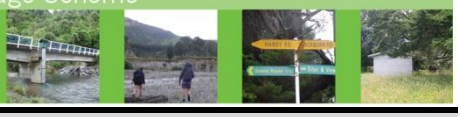
3.1 Summary of Current Recreation Opportunities that May be Lost/ Changed

Based on the analysis in section 2.3 a summary of potential effects of the proposal on recreation in the Scheme area is provided in Table 3.0 below.

Table 3.0: Assessment Results

Recreation Zone 1	Opportunities Lost/ Changed by Activity Type (and level of significance)
Tramping/ Hiking	Access to a number of tramping/ hiking tracks will be adversely affected unless appropriate mitigation is provided for. This would be a significant adverse effect as it is a regionally important resource for this activity. Appropriate mitigation measures are referred to in the PD and HBRIC's Proposed Integrated Mitigation and Offset Approach (May 2013f).
Hunting	Access to a number of hunting areas will be adversely affected unless appropriate mitigation is provided for. This would be a significant adverse effect as it is a regionally important resource for this activity. Appropriate mitigation measures are referred to in the PD and HBRIC's Proposed Integrated Mitigation and Offset Approach (May 2013f).
Fishing	The fishing opportunity will be altered from an in-stream experience to a dam side experience, and with appropriate mitigation in place, the dam side fishing opportunity could provide an enhanced experience in this area given the low value currently attributed to fishing in this area. Appropriate mitigation measures are referred to in the PD and HBRIC's Proposed Integrated Mitigation and Offset Approach (May 2013f). Also provided the 'trap and transfer' measures recommended in the Cawthron (May 2013) sustain the fishery, there will continue to be angling opportunities in the upper Makaroro River.
Day Visits	The activity of day visits will be adversely affected unless appropriate mitigation is provided for. This would be a significant adverse effect given the loss of an easy access to a historic and important bird watching area. Appropriate mitigation measures are referred to in the PD and HBRIC's Proposed Integrated Mitigation and Offset Approach (May 2013f).

Camping	The activity of camping will be altered. The level of effect is unable to be quantified as there are potential benefits to an altered camping environment.
Mountain Biking	Access to the only DoC mountain biking track in the region will be adversely affected unless appropriate mitigation is provided for. This would be a significant adverse effect as the track is a regionally important resource for this activity. Appropriate mitigation measures are referred to in the PD and HBRIC's Proposed Integrated Mitigation and Offset Approach (May 2013f).
River Kayaking	The kayaking opportunity will be affected. This would be a minor adverse effect given the low value attributed to kayaking in this area.
Four Wheel Driving	The area provides a regionally significant four wheel driving opportunity and will be affected as a result of the proposal. This would be a potentially significant adverse effect for the small numbers of users. There are potential mitigation opportunities such as relocation of the activity to an alternative venue.
Water Sports	Not applicable – discussed in section 3.2.
Rowing	Not applicable – as discussed in section 3.2.
Private Recreation Activities and Opportunities	The activity of private recreation activities and opportunities will be altered. There is no effect identified/ neutral effect given the perceived decline in use of the area for these purposes. General mitigation may result in a positive effect making this area more attractive to its users. Appropriate mitigation measures are referred to in the PD and HBRIC's Proposed Integrated Mitigation and Offset Approach (May 2013f).
<u>Recreation Zone 2</u>	
Fishing	Existing access points to fishing the Makaroro River and Waipawa River will be unaffected. The effect of the proposal on fishing is likely to change however from the information available it appears that the activity of fishing in 'recreation zone' 2 will remain with appropriate mitigation in place as referred to in the PD and HBRIC's Proposed Integrated Mitigation and Offset Approach (May 2013f).
Day Visits	The activity of day visits will be unaffected. In addition current swimming sites are unlikely to be affected below the dam, except in so far as altered, through more regulated flows which is arguably a positive benefit to swimming (implementing flow regime in summer months that reduces the level of periphyton growth).



Four Wheel Driving	The activity of four wheel driving will be unaffected.
River Kayaking	The kayaking opportunity will not be lost however opportunities as a result of dam flushing flows is unlikely given releases will take place when certain environmental 'triggers' occur. This means that the ability to provide notice to kayaking organisations is limited. Access to the river between Burnt Bridge and the dam wall will be restricted to Burnt Bridge. This is considered to be a minor adverse effect given its low value and relatively low level of use.
Zone M	
General Recreation Effects – Walker Road	Recreation activity in the Walker Road end area is unlikely to be affected by the proposed downstream water intake structure provided appropriate measures to secure and restrict access to the intake structure itself are implemented.
Fishing	The current values attributed to ecology in the Papanui Stream are low. The Zone M proposal seeks to enhance the ecological values attributed to this stream. This is considered to be a positive effect.
Walking and Cycling – Papanui Stream	It is proposed to improve the instream ecology, general amenity and may also '*provide recreation opportunities, such as developing a walking/cycling path, linking the settlements of Otane and Waipawa at the edge of the new riparian margins along a portion of the Papanui Stream, subject to engagement and approval with landowners'*. This is considered to be a positive effect given the low recreation and ecological value currently attributed to the Papanui Stream.
Other Recreation Effects	
Forest Park Access	Access to the Ruahine Forest Park via Wakarara Road End will be adversely affected unless appropriate mitigation is provided for. This would be a regionally significant adverse effect given the limited vehicle access points to the Ranges currently available. Appropriate mitigation measures are referred to in the PD and HBRIC's Proposed Integrated Mitigation and Offset Approach (May 2013f).

3.2 Overview of New Recreational Opportunities that May be Created

The following section summarises the potential new recreational opportunities as identified through an assessment of the Scheme against consultation undertaken with existing and potential recreational users of the area and relevant literature. It also considers any potential recreational benefits as a result of the proposed Papanui headrace concept for

Zone M as outlined in the 'Zone M Primary Distribution Concept Review and Assessment' (Environmental Management Services Ltd, February 2013).

Flat Water Opportunities

Overall, the Scheme is going to result in a significant new body of flat water that may be publically accessible. It is in close proximity to the towns of Waipukurau and Waipawa (30 minutes) and within 60 to 90 minutes of Napier and Hastings. There is therefore likely to be considerable interest in any new recreation opportunities, particularly given that there are limited other flat water opportunities in the Region. Publicly accessible water bodies currently include Lake Tutira (30 minutes north of Napier) and Lake Waikaremoana (2 hours from Napier). In addition there are smaller water bodies such as Lake Hatuma (70 minutes from Napier and 10 minutes from Waipukurau) and Backpaddock Lake (10 minutes south of Waipukurau). Lake Tutira and Lake Hatuma have water quality issues which limits their recreational value.

Lake Hatuma is also well known by longer term local residents for its former recreation use including sailing, kayaking and jet boating, which are no longer available due to silting, water quality and access issues (Clark, 2011).

For various water sports their specific needs are exclusive and therefore flat water is in high demand. For example, Backpaddocks Lake has been developed exclusively for wake boarding, water skiing and bare footing given the sensitive design requirements for slalom related activities.

In reviewing the general provision of flat water available in the Region against the range of water sports in the Region that require the use of flat water, it is considered that further investigation into the merit of water sports on the proposed dam should occur. Possible options for further investigation include rowing, flat water kayaking and waka ama.

Issues such as water plumage, de-vegetation (or lack of) and user safety around significant infrastructure, and how these will be managed will potentially place constraints on the dam for recreational use. The requirement for a recreation management plan as a condition of consent (through the RFERP) is therefore supported.

Zone M - Papanui Stream – Recreation Opportunities

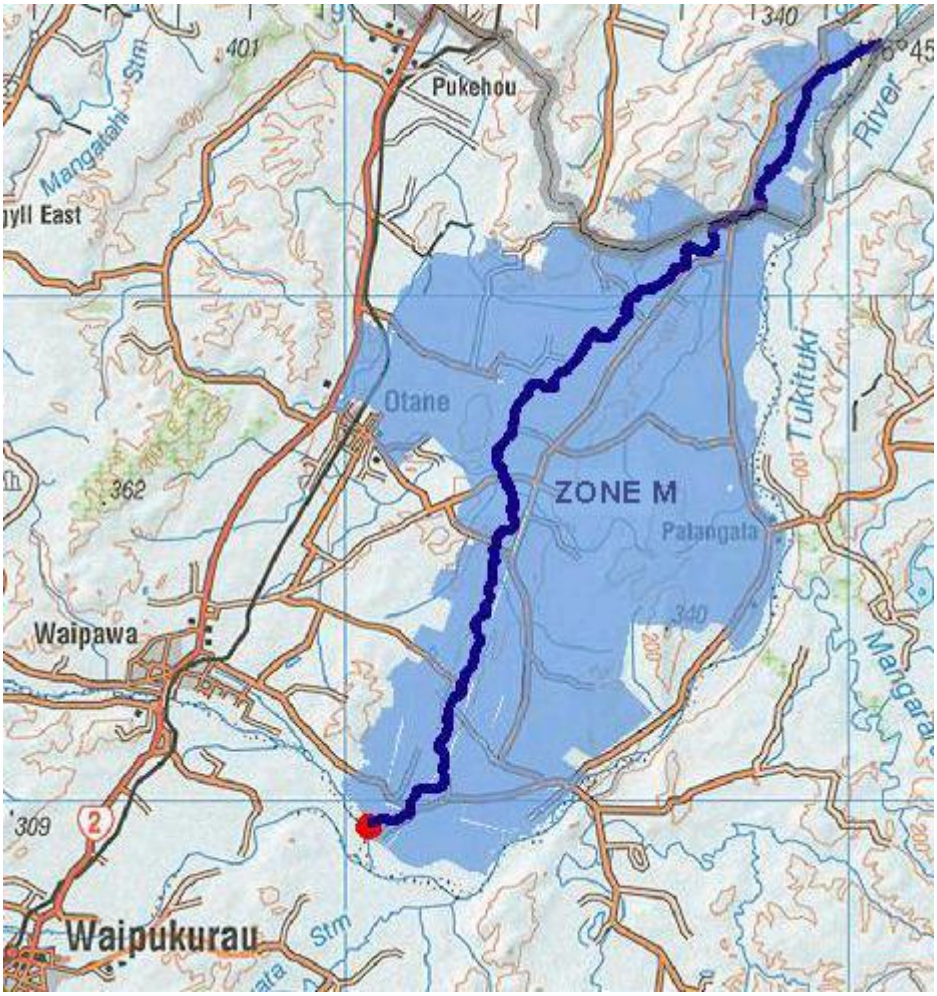
Zone M proposes to utilise the existing Old Waipawa River Bed/ Papanui Stream ("Papanui Stream") as the primary distribution mechanism for Zone M of the proposed Scheme via an open course headrace canal. The HBRC Stream Ecological Valuation ("SEV") report (Storey, 2011) identified the surveyed reaches as being in poor ecological condition that would benefit from riparian planting and fencing. The Zone M concept description proposes a range of measures to enhance the stream and its surrounds and signals the potential to provide for the following recreational opportunities/benefits as part of proposed enhancements:

"Recreational opportunities may be provided, such as developing a walking/cycling path linking the settlements of Otane and Waipawa at the edge of the new riparian margins

along a portion of the Papanui Stream, subject to engagement and approval by landowners."[6]

Zone M is shown in figure 4.0 below:

Figure 4.0 Zone M



We note that consultation with landowners and the wider public on this aspect of the proposal has yet to be undertaken and that decisions around public access and ongoing maintenance of this area have therefore yet to be determined.

The development of a pathway as proposed within the 'Zone M Primary Distribution Concept Review and Assessment' (EMS May 2013a) would provide approximately 23 kilometres of off-road, flat gradient, walking/cycling opportunity within an enhanced riparian environment suitable to less experienced and recreational cyclists. There is also the potential for additional opportunity to develop longer rides by connecting with the on-road rural roading network in the vicinity and with the small rural townships of Waipawa and Otane.

[6] RWSS Zone M Primary Distribution Concept Review and Assessment, Environmental Management Services Limited, February 2013 p19

The Development of a pathway in Zone M supports the Central Hawke's Bay Cycling Strategy Review (2009) and the Hawke's Bay Open Space Assessment[7].

Overall it is our conclusion that with the necessary land agreements secured and community support for the proposal, development of Zone M as proposed has the potential to create positive recreation effects in terms of additional cycling/walking opportunities in the area.

A summary of possible recreation opportunities associated with the proposed dam and surrounds is discussed further below. Note: A number of these opportunities have been considered within the PD and HBRIC's Proposed Integrated Mitigation and Offset Approach (May,2013f).

[7] Environmental Services Limited, 2007

Table 4.0: Overview of Recreational Opportunities

Recreation Zone 1	Potential New Opportunities by Activity Type (and level of significance)
Tramping/ Hiking	**Improved Access Arrangements** - With the development of the proposed reservoir there is an opportunity to formalise an agreement with reservoir side landowners and create secure access to and around the area. From discussion with representatives of DoC it was identified that there were 3 – 4 possible alternative car park and picnic locations alongside the footprint of the proposed dam that might be supported should there be agreement between the landowner and the Department. Refer to the PD Map – DA 105. Several alternative options to access tramping tracks on the other side of the river/ dam area were presented during consultation that could be further investigated: • Swing Bridge • Cable/ suspension bridge, capable of carrying mountain bikes (good example on Waikato River Trail) • Boat attached as a cable pulley • Ski Lift • Guide rope – attached to boat/ pontoon. **Walking Tracks Around the Dam -** With the development of the dam there is an opportunity to develop additional walks around the reservoir edge, more suited to 'short walks' and these could be incorporated as part of riparian and vegetation margins around the dam.
Hunting	As per Tramping/ Hiking above.
Fishing	There is an opportunity to create a new fishing experience through stocking of the dam and creating an appropriate fish environment within the proposed dam. A number of considerations would need to be further investigated such as suitable fish habitat, re-stocking methods, fish passage, fishing access and boat access (including boat ramp facilities), fishing huts and facilities.
Day Visits	There is an opportunity to create more formalised picnicking areas around the proposed dam footprint, further enhancing the limited picnicking that already occurs in the area.
Camping	The existing camping opportunity will be affected. Relocation and further enhancement of this area could alleviate the current high demand for coastal camping space which is identified in the

	Hawke's Bay Rural Open Space Study (Environmental Managment Services Limited, 2007). Although not coastal, the dam environment may provide an equally appealing camping opportunity.
Mountain Biking	As per Tramping/ Hiking above.
Four Wheel Driving	There is limited opportunity for publicly accessible off road four-wheel driving at this location as a result of the Application Design.
River Kayaking	Not applicable. No opportunity identified.
Water Sports	**Water Sports -** There are a number of possible water sport opportunities as a result of the development of the dam that have been highlighted from discussions with recreation user groups and other key stakeholders associated with the Scheme. The opportunities are based on the premise that the dam itself will be accessible by the public and will be of safe water quality for use by the public as confirmed by NIWA (May 2013b). • **Non-motorised boating** – yachting, kayaking, waka ama and rowing are all potential dam recreation activity options raised by stakeholders. • **Motorised boating** – a mixed response to motorised water sports was received from consultation. • **Boat staging and launching** – in order to access the dam there would need to be provision for boat staging and launching. • **Diving** – diving was a possible option raised during consultation. It is understood that the Hawke's Bay Rowing Club are seeking a flat water home equivalent to the Karapiro scenario (Hawke's Bay Today, 2009). In addition, the Hawke's Bay Rural Open Space Study (Environmental Managment Services Limited, 2007) identifies a need for alternative rowing opportunities in the Region. The report above also identifies a lack of fresh water opportunities for yachting in the Region other than Lake Waikaremoana and the Wairoa River.
Private Recreation Activities and Opportunities	There is an opportunity to enhance the area for the benefit of these groups, through an improved and greater range of Road End opportunities such as short walks and the provision of educational interpretation material.
<u>Recreation Zone 2</u>	

Fishing	It is considered more consistent river flows throughout the year, particularly during the summer months when recreational users might frequent the area for recreational pursuits, may create increased fishing opportunity.
Day Visits	There is not considered to be a demand for these opportunities in 'recreation zone' 2. The 'Halo' Project whereby Hawke's Bay Regional Council are researching terrestrial mitigation options within 'recreation zone 2' (riparian enhancements), may provide enhanced amenity value for walkers and day trip visitors.
Four Wheel Driving	There is not considered to be any increased demand for these opportunities in 'recreation zone' 2.
Kayaking	There may be more consistent opportunities for kayaking through the summer period due to more consistent flows.
Zone M Opportunities	
Walking and Cycling Opportunities	The proposed development of a walking/cycling path, linking the settlements of Otane and Waipawa at the edge of the new riparian margins along a portion of the Papanui Stream, is considered to be a positive recreation opportunity for the project.
Other Recreation Opportunities	
Forest Park Access	There is an opportunity to formalise and enhance the Ruahine Forest Park at the Wakarara Road End.

3.3 Overall Assessment Of The Proposed Dam For Recreation Purposes

The establishment of a freshwater reservoir will potentially disrupt some existing recreational activities and opportunities, but will also potentially create a significant new recreational opportunity, as outlined in Table 4, and as would be progressed through the RFERP objectives.

In addition, enhancement of the Papanui stream to include the provision of walking and cycling access will also potentially create significant recreation opportunities.

If developed appropriately recreational benefits will be viewed, in addition to irrigation, as the long-term positive 'face' of the Scheme. In other examples, where recreation has provided a positive benefit (for example Lake Opuha in the McKenzie District; Lake Coleridge in inland Canterbury) the end recreation use has been considered at an early stage in the project.

4 Suggested Approach for Effects Identified

The table below (table 5.0) provides a summary of possible mitigation opportunities. Note: A number of these opportunities have been considered within the PD and HBRIC's Proposed Integrated Mitigation and Offset Approach (May 2013f).

Table 5.0 Summary of Possible Mitigation Opportunities

Recreation Zone 1	Mitigation by Activity Type
Tramping/ Hiking	There are a number of recommended approaches for addressing the loss of access to the upper Makaroro catchment area as a result of the Scheme. These are listed below: i. Formalise an agreement with relevant landowners to provide secure access to the upper Makaroro catchment. ii. Provide temporary access to the upper Makaroro area during construction.
Hunting	As per Tramping/ Hiking above.
Fishing	Fishing will be displaced in 'recreation zone' 1 however this activity is considered to be of relatively low significance in the area given that alternative fishing opportunities could be considered within the dam development (i.e. dam side fishing).
Day Visits	Incorporate Road End recreation amenity to replace existing DoC information board and Road End activities which are currently located on private land and operated through an informal agreement.
Camping	Camping will be lost in 'recreation zone' 1. Consideration of an alternative dam side camping experience should be considered.
Mountain Biking	As per Tramping/ Hiking above.
Four Wheel Driving	Four wheel driving will be lost in 'recreation zone' 1. Given the lack of publicly accessible four wheel drive opportunities it is recommended that alternative similar sites be considered and made available.
River Kayaking	River kayaking will be displaced in 'recreation zone' 1 however this activity is considered to be of relatively low significance in the area. The experience can be replicated elsewhere and therefore no specific mitigation is proposed. Alternative kayaking opportunities could however be considered within the dam development (i.e. flat water kayaking).
Water Sports	Not applicable.
Private Recreation Activities and	As per Day Visits above.

Opportunities	
Recreation Zone 2	NOTE: Proposed terrestrial mitigation options within this zone may provide enhanced opportunities for existing uses (Halo Project). It is recommended that appropriate management of river user safety be implemented during flushing flows as part of the overall project.
Fishing	Mitigation is proposed to offset the effects of the proposal on river quality, fish and invertebrates.
Day Visits	No mitigation is proposed.
Four Wheel Driving	No mitigation is proposed.
River Kayaking	No mitigation is proposed.
Zone M	
General Recreation Activities - Walker Road	It is recommended that appropriate measures to secure and restrict access to the intake structure itself be implemented.
Fishing	No mitigation is proposed, any effect will be positive.
Walking and Cycling	Mitigation is proposed within the PD to the effect of development of a walking/cycling path, linking the settlements of Otane and Waipawa at the edge of the new riparian margins along a portion of the Papanui Stream. This is supported to aid in the enhancement of the currently degraded stream values both in terms of ecology and recreation.
Other Recreation Effects	
Forest Park Access	As per Tramping/ Hiking above
Recreation Effect of the Reservoir	The reservoir itself is likely to have effects on respective recreation opportunities that are both positive and negative. Early consideration of recreation values in the reservoir design and operation through the RFERP is recommended to ensure benefits will be positive. Key recommendations include: i. Recreation users – to ensure a positive recreation benefit it is recommended that HBRIC Ltd further engage with potential users such as rowing and motorised water sports to understand their needs and requirements. ii. Reservoir edge treatment – a characteristic of this proposal is the significant drop in dam levels between low and full flows – and it is acknowledged that during low flows the visual clarity may reduce the overall quality of the recreation experience.

This would significantly impact on recreation users of the dam edge particularly at the upper edges of the dam and along any access corridors. Appropriate treatment to the upper dam edge to ensure positive experience for recreation users will be important.

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Appendix 1: Full Record of Consultation

Appendix 1: Record of Stakeholder Consultation

STAKEHOLDER GROUP

Name	Representation	Discussion Held
Andrew Watts	Landowner Representative	Responses to the various questions discussed: 1) Understanding the recreational activities in the area a) Tramping club, Mountain biking club, walking, deer stalking, trout fishing, people also drive up the river to the Makaroro Hut (4WD and motorbikes), horse trekking b) Some people know about the Old Mill site – it's pretty much all gone (one rust bucket left). This was operating until the 1960's. There was a bridge at the Mill – went in a cyclone some time ago. 2) How activities fit into the wider context of recreation opportunities in the Hawke's Bay region. a) This is a fairly accessible area – within a 'stone's throw' of Hawke's Bay residents b) This area takes you through to Duff's Flat (Yeoman's Track – where they used to harvest logs) c) It is quite a long alternative to get to the Yeoman's Track if the access is lost. Possibly even 30km longer – and its via a forestry road 3) Effects of the project on identified recreation opportunities a) Trout country – don't think there is going to be trout spawning lost, but others might argue this b) Access for trampers and deer stalkers – this is important tramping track access 4) Discuss what can be done to avoid remedy or mitigate adverse effects on recreation a) May need to build a bridge for access? b) Comment that alternatively one of the neighbours might have access to the lake
Campbell Chard	Ruataniwha WUG	To date no response to phone messages and email correspondence has been received
Christine Scott	Regional Councillor	A discussion was held with Christine Scott about the project generally. Being a Councillor, Christine is on the Stakeholder Group to ensure that the interests of the Councillors are communicated generally.
Debbie Hewitt	Chairman of Stakeholder Group	To date no response to phone messages and email correspondence has been received
Duncan Holden	Landowner Representative	A discussion was held on the 18th February 2012. In summary the following points were noted: 1) Recreation activities undertaken in the project area are tramping, hunting, small amounts of fishing 2) The area is of limited value given the area is just beneath the Ruahine Ranges, and not very close to the sea 3) Need to discuss the proposal with Rowing NZ – this will provide an indication of whether rowing would be a possible opportunity for the Dam

STAKEHOLDER GROUP

Name	Representation	Discussion Held
		4) Need to consider that rowing is an expensive sport (carting boats is expensive) 5) The Karapiro Lake is world class and at that level the equipment required is unique, therefore the whole area is protected from other water sports 6) May be other water sports opportunities – canoeing etc 7) General concern about the impacts of the proposal on landowners – how will the dynamic of their current environment change? Land values increase/ decrease etc?
Pat Sheradin and other Department of Conservation Staff	DOC	Refer to detailed correspondence attached at the end of this spreadsheet.
John Freeman	CHBDC Rep	A meeting was held with John Freeman about the project generally. Particular recreation aspects were not discussed at this meeting however the comment was made that CHBDC is generally in support of the Proposal itself and looks forward to seeing opportunities eventuate as a result of increased and more readily available water supply.
Liz Graham	Tamatea Taiwhenua	To date no response to phone messages and email correspondence has been received
Benita Wakefield	Tamatea Taiwhenua	To date no response to phone messages and email correspondence has been received
David Gore	Forest & Bird	A meeting was held with David Gore. Refer to detailed correspondence attached at the end of this spreadsheet. In addition, the following points were made: 1) Current users also include -deer stalkers – If sitting at Barlow's Hut at lunch time typically you would expect to see hunters coming along the River with game on their backs. This is not uncommon. 2) One of the key factors that sets this area apart is the fact that it is readily accessible to Hawkes Bay residents. Not many other areas as amenity rich are located this close to town. 3) Trampers come to this area from Wellington 4) Napier Hastings Forest and Bird access this area 2 -3 times per year for events. 5) A comparable area is Sunrise Hut walk 6) Contact Bernie Kelly – Canoe Club (06) 870 0837 – was the Chairman
Max Chatfield	Forest & Bird	A meeting was held with Max Chatfield. The following points were made: 1) Current recreation values comprise of – tramping, bird watching, indigenous forest 2) One of the few river walks that Hawke's Bay have, reasonably easy access and good for children – unique in this regard 3) General support for project – 1) droughts are a key issue in the HB area, 2) the lake itself provides a great recreation opportunity, 3) the key will be to keep recreation non motorised. 4) Reliance on research being done well – to ensure adverse effects are offset/ mitigated

STAKEHOLDER GROUP

Name	Representation	Discussion Held
		5) Deer stalkers would be worth speaking to 6) School groups stay at Camp Wakarara – speak to Camp Wakarara 7) Steve Wilson also runs a private camping ground (has an ablution block on site) – 06) 858 9558 8) The hut at the end of Norris Road might have some connection to the Takapau Scouts – worth investigating
Mike Mohi	Tamatea Taiwhenua	To date no response to phone messages and email correspondence has been received
Pete McIntosh	Fish and Game Rep	A meeting was held with Pete McIntosh. The following points were made: 1) The Tukituki River and catchment is a Nationally Significant River, it is so long and so diverse – one of the top 10 fishing rivers in NZ. The area's proximity to populations of the rest of the Hawke's Bay is a significant attribute of this area. Over time as land use intensification has occurred, the values of this area have declined – essentially poorer quality environment (declining water quality etc) meaning fewer and smaller fish. There are concerns that further land use intensification through the Ruataniwha Water Storage Dam Proposal will add to the decline in the quality of this environment. If the area degrades further (too much), this will be to the detriment of New Zealand. 2) Regarding the proposed "dam" area itself, there are a few fishermen who do head into this area, and those that do, enjoy fishing in it. Not talking about large numbers of people however. 3) Given the fluctuating levels of the proposed "dam" environment, it is not expected to create a lake "fishery" as such. May have some fishing values but not significant due to the large operating range of the lake. Need to think about access via boat ramps etc. 4) Some possible mitigation worth thinking about: 5) Stop runoff entering waterways – nutrient budgets, farm management plans that are enforced, effective riparian buffer zones (remember that can offset costs through the carbon credit system), effective and enforced resource consent conditions 6) Collect fish at spawning time (from base of dam where fish can go no further) and relocate in the lake to head into the spawning areas. This has been done in other situations around the country. To research best practice. 7) Collect royalties/ bulk funds – to put back into research of fisheries.
Peter Butler	CHB Mayor	To date no response to phone messages and email correspondence has been received
Phil King	Ruataniwha WUG	To date no response to phone messages and email correspondence has been received
Tom Belford	Bay Buzz	To date no response to phone messages and email correspondence has been received
Brian Eccles	Jet Boating NZ	To date no response to phone messages and email correspondence has been received
George Williams		To date no response to phone messages and email correspondence has been received

RECREATION INTEREST GROUPS

Name	Representation	Discussion Held
Alan Berry	Heretaunga Tramping Club	A meeting was held with Alan Berry. Refer to detailed correspondence attached at the end of this spreadsheet. In addition, the following points were made: 1) The 50 people referred to in the meeting notes is the Clubs assessment of the number of people from the Heretaunga and Napier tramping clubs who might access Yeoman's track each year on an organised basis. If both clubs had say four trips between them (weekenders and midweekers) up the Makaroro River as well each year, the number would be more like 100. 2) The Club would emphasise though that the primary interest of tramping club members, and indeed of all mountain users, is the assurance of access. Although the Club are presently able to cross the Hall's property to get to the Makaroro, the landowners' goodwill would be sorely strained if everyone who wanted to either go up the river or in to Ellis' Hut wanted to cross their farm. This is why it is considered to be essential that formal access is created along the southern edge of the lake, from the road-end to the Makaroro above the high tide mark.
David Hern	Dave Hern Hunting and Fishing	To date no response to phone messages and email correspondence has been received
Albert Rebergen	Forest and Bird - name given by Pete McIntosh	To date no response to phone messages and email correspondence has been received
Bernie Kelly	Canoe Club	To date no response to phone messages has been received
Rachel Smith	Camp Wakarara	To date no response to phone messages and email correspondence has been received
Secretary	NZ Deerstalkers Association	Email correspondence was received from Hastings Deerstalkers on the 16th February 2012. The following points were noted: 1. It is considered that the proposal would greatly affect members of the Club as these are key access points to the Ruahine Ranges, which a significant number of the members use. 2. The access up the River to the Parks Peak Hut, Barlow Hut and the Yeoman will be lost as a result of the proposal. 3. A lot of the Club's members are fishermen also so this will affect back country fishing. 4. The effects on fishing will be offset somewhat by the introduction of a lake fishery 5. The construction of some new access points is a must.
Hawkes Bay Rowing	Hawkes Bay Rowing	A discussion was held with Peter Twigg on the 9th March 2012. In summary, the following points were noted 1. Peter Twigg's perspective is from a Rowing NZ Board Member and as a Coach at the HB Rowing Club. 2. The Central Hawke's Bay Rowing Club used to exist, but numbers have declined so much that members now come to the Clive River and train with the Hawkes Bay Rowing Club.

RECREATION INTEREST GROUPS

Name	Representation	Discussion Held
		3. These members are currently driving over 1 hour to train at Clive – 4-5 times per week. 4. Would be great to see the CHB Rowing Club re-invigorated – and this proposal might provide a good alternative venue for this club to base themselves. 5. There are approximately 60 rowers in the Hawke's Bay currently and might see this increase by 20-30 with a new facility. 6. Hawke's Bay, Horowhenua and Wellington Clubs would likely come across to this venue to train if it were available. 7. Any rowers north of Napier generally head to the Wairoa River to train – as this is a good rowing facility. 8. Lake Karapiro is booked out every weekend for different water sports – very busy venue (waka ama, flat water canoeing, hydroplanes, water-skiers etc). 9. Access to any proposed lake is an important consideration – particularly if the water levels will be fluctuating. 10. There might be a small possibility of holding regattas at the venue as well. 11. There would need to be a club based there – i.e. with a suitable shed etc to store boats. 12. All rowing equipment for out on water is temporary and is removed at the end of the training. 13. There might be opportunities for summer rowing camps as well (training facilities). 14. Overall the Hawkes Bay Rowing Club would support the proposal in terms of another training venue.
Michael Harding	Harcourts Waipukurau (into wakeboarding)	A discussion was held with Michael Harding on the 15th February 2012. In summary, the following points were noted: 1) Michael Harding's role in the water ski club is that of secretary of the Central Hawkes Bay Water Ski Club 2) There is a new purpose built water ski lake on Speedy Road, Takapau as per the article released in Hawke's Bay Today on Tuesday the 14th February 2012. 3) This new purpose built lake will provide the area with sufficient water ski provision (including slalom course which is the main source of income for the Club). 4) The closest slalom course apart from this new lake is located in Taupo (Blue Lakes)or Wanganui 5) A water ski slalom course would not be appropriate at the Dam, particularly if there are multiple recreation users. Slalom courses get damaged too easily. They are high maintenance. 6) As far as the proposed Dam is concerned, it would be ideal for other water sports such as rowing, wake boarding (although need to think about wake damage as a result of recreation use. Wake damage can be mitigated by plantings and correct batter and material on the shores) 7) It is considered that the two water facilities complement each other rather compete against each other in terms of recreation value. 8) We should try and offer something different in the way of recreational facilities, the bigger lake would be suited to wind or kite boarding, rowing, fishing and other things that require a larger open area.
Mountain Biking	HB Mountain Biking Club	Meeting was held 1st February 2012. The record of discussions are attached at the end of this spreadsheet.

RECREATION INTEREST GROUPS

Name	Representation	Discussion Held
Takapau Scouts	Takapau Scouts	To date no response to email correspondence has been received
John Jones	HB4WD Club	Email correspondence has been received. In summary the following points have been made: 1) The Club sometimes use the area for club events, either on the river bed or on adjoining properties. 2) Although the Club acknowledge that they are a minority sporting group, they do feel that they are losing more and more areas in which they can undertake their sport. They are losing areas though changes in ownership, changes in land usage & and perceptions on liability issues. 3) Understand that the aim of the project is to improve water storage for irrigation purposes & and thus improve the economy for Central Hawke's Bay, however they Club also feel that the project is likely to impact on their recreation activity in a negative way. 4) The area is significant in the fact that it is one of the few challenging areas in Hawke's Bay suitable for use in the summer. There is on the same river above the Mill but it is not looked at favourably by the Department of Conservation. 5) The Club cannot see what could be done to mitigate any adverse effects on their chosen recreation. 6) The Club cannot see any new recreational opportunities for use that may be created by this project. Instead the club feel that it will probably be detrimental to their recreation in the area. 7) The Club mostly access the true left area of the proposed dam area from the Wakarara Road end but also from Smedley & Gwavas Forest. 8) The Club tend not to access farms on the true right of the proposed dam area. 9) The Club access the dam footprint area and surrounds on average once or twice a year. 10) The club currently has 40 members.
Secretary	Hawkes Bay Orienteering	Email correspondence was received from the Hawke's Bay Orienteering Club on the 17th February 2012. In summary the following was noted: 1) The Club have a large area we use for orienteering between the Makaroro and Smedley Roads but this will be outside the areas directly affected by the project. 2) The project area contains some of the best and most used areas with about 150 people using the area for each event, at least twice a year. The area will be used as part of the 2013 Oceania international orienteering event. 3) The Club does not consider that the proposal will affect its existing orienteering areas. 4) If the project involves land becoming owned by someone e.g. HBRC that would look upon orienteering access in a favourable light then the project will have benefits for the club and its members. Improved roading in the area would also be of benefit in attracting members and public to events in the area.
Admin	Adventure Services	To date no response to email correspondence has been received

SCIENTISTS INVOLVED IN PROJECT		
Name	**Representation**	**Discussion Held**
Olivier Ausseil	Senior Water Quality Scientist for Aquanet Consulting - Water Science lead	Meeting held to discuss connections between Water Sciences and Recreation Values. Discussions are ongoing.
Gerry Kessells	Kessells Terrestrial - Terrestrial Studies lead	
Glenn	Technical Assessment Fish Values	Awaiting Fish Values Report
Gavin Lister / Wade Robertson	Landscape Architect	Telephone discussions held regarding connections between Landscape Assessment and Recreation Values
Vince Byrne	HBRC	A discussion was held on the 1st February 2012. In summary, the points noted were: 1) Not a lot of known fishing spots in the dam footprint area. The fine alluvial gravel is not really conducive to good fishing. 2) Note however that Dutch Creek is of fish spawning significance. 3) Hunting is popular in the area. 4) Poaching is a real issue in the area.
Steve Cave	HBRC	
Neil Daykin	HBRC	A discussion was held on the 1st February 2012. In summary, the points noted were: 1) Ideas around possible mitigation for loss of access at Dam Footprint area • Cable/ suspension bridge, capable of carrying mountain bikes etc (there is a good example on the Waikato River Trail). It costs approximately 200K to construct 60m of bridge. • Boat attached as a cable pulley • Ski Lift • Guide Rope – attached to boat/ pontoon 2) The size of the headrace canals has an influence on whether any recreation values can be created from these –deep and narrow canals are likely to be more favourable (as water less likely to evaporate)

RECREATION INTEREST GROUPS

Name	Representation	Discussion Held
		3) Kayak and slalom course in canal system as a possibility to consider? But is there the population to justify it? 4) Fishing – commercial/ recreation/ freshwater crays/ trout/ salmon 5) Dam lake edge – cant do a lot about the fluctuation but consider that dead plants will quickly recover
Tim Sharp	HBRC	A brief discussion was held with Tim Sharp about the Kayaking Values Report

LANDOWNERS		
Name	**Representation**	**Discussion Held**
Kelvin Ferguson	Familiar with Owners	Discussion was held in general terms about the landowners and their relationship to the project.
Bryce Wright	Gwavas Forest manager	Both email correspondence and telephone communications were undertaken with Bryce. The following key comments were made: 1) Pan Pac Forest Products offers a lot of recreational activities within the forest but as you can imagine these must have a few controls placed upon them because of the changing situations within the forest where 30 to 50 people go to work every day. 2) The company promotes recreational use of the forest, and this is done through the main access points from Gwavas Rd. 3) The users that come across the Makaroro River are unpermitted, unwanted and a danger to legitimate users. So in reality a large body of water on the boundary should make it a safer place.
Terry Walters	Smedley Station	A telephone discussion was held with Terry Walters. In summary Terry was supportive of the project and saw that the few recreation values that exist in the area presently could be mitigated through the proposal. The area as it exists currently has low significance in terms of recreation values in the Hawke's Bay. With the proposed new lake there are numerous recreation opportunities including fishing, kayaking and swimming for example.
Craig Preston	Wakarara Rd	A phone discussion was held with Craig Preston on the 15th February 2012. The key points from the discussion were as follows: 1) Current recreation in the project area is primarily limited to trampers and hunters. 2) Any plans for the dam need to include the provision of access around the edge of the dam area to provide for ongoing access to the tramping and hunting areas. 3) The Makaroro River is not a great trout river from personal experience. Cyclone Alison in 1975 damaged the trout fishery resource and it has never quite recovered. 4) The fisheries issues are more significant downstream of the dam footprint area. 5) If the proposal goes ahead then recreation opportunities will improve in the area.
Steve Wilson	Parks Peak Station	The discussion points prior to the meeting via email were: 1) Steve has little knowledge of vegetation removal or dam height confirmation at present. 2) The proposal is seen as an opportunity to clean up problems of access that forestry and Smedley have with poachers. 3) Steve runs a camping ground with access to the river which will be flooded. A meeting was held at Stephen Wilson's property on the 31 January 2012. This meeting was followed up with email correspondence to confirm discussions. The following are the key points from these discussions: CURRENT RECREATION IN AREA: 1) The current recreation activities in the area comprise of; tramping, mountain biking, hunting – deer and pigs, campers, very small numbers of fishermen, passive day excursions (visiting the historic mill site – there are still people around who worked at the mill and go there to reminisce, and the sight seers) and the occasional jet boater. 2) In Steve's opinion approximately 3000 – 4000 people access the Wakarara Road end per year (including visitors to the private camping) 3) Of note there are virtually no kayakers in this area – as not considered suitable. 4) Horses and 4WD are not allowed up the River.

LANDOWNERS		
Name	**Representation**	**Discussion Held**
		5) Occasional Army Exercises occur in the area. 6) There is a scout den in the area – although not used often 7) Approximately 25% of the people coming to the area come for dishonest activities – possibly poaching etc. Worth discussing with NZ Police if want to know more about this (possibly try John Singer) 8) On Parks Peak Station there is a private camping ground. Approx 300 – 400 people through per annum. This is operated through word of mouth. There is an ablution block, running water etc at the camp site. 9) Camp Wakarara – its use appears to be declining over the years – less visits to the area than previous years. 10) Significant question is – who is expected to police the activities here? Reverts to closest farm dwelling when there is an emergency or serious situation. Which always reverts to Parks Peak Station currently. Will this exacerbate with the proposal given the possible increase in recreation users? ***EFFECTS OF PROPOSAL:*** 11) Agreed that access to tramping tracks/ mountain bike track access will be lost – alternative access is a discussion that is needed between HBRC, DoC and the landowner. Yet to have this discussion. 12) If managed well there is an opportunity to improve the current situation in terms of genuine recreation opportunities. 13) There is a significantly large piece of native bush that will be lost as a result of the flooding to create the dam. Is likely to be impractical to remove all of this vegetation but equally it would be dangerous to allow recreational water users to access this area when flooded as could be dangerous. How to address this. ***QUESTIONS/COMMENTS ABOUT THE PROPOSAL:*** 1) The island that may be created as a result of the proposal is a rare Falcon habitat. 2) Would be great if Camp Wakarara could get more involved in the area. 3) Who is going to 'police' the lake – i.e. how will recreation values be managed? Will there be 'no go' areas for recreational users? Need to think about this. 4) Noise issues as a result of motorised sports. How will these be mitigated?
Jeff Worsnop	Rangimare Farm	To date no response to email correspondence has been received

Ruataniwha Recreation Assessment
Consultation with Department of Conservation
11 January 2012

Attended by:

DoC:	Pat Sheridan (Napier); Andrew Mercer (Palmerston North) Ken Mills (Ongaonga)
Opus:	Michele Frey; Stella Morgan

Stella/Michele outlined the project and explained the purpose of the recreation assessment.

In response to the pre-circulated questions Pat, Andrew and Ken made the following comments.

Recreational activities and issues

1. Wakarara Road end is a key access point to the mid Ruahine Ranges with access to three popular day walks (Yeoman's Track; Barlow Hut and Gold Creek); as well access to a number of options for crossing over the divide into the western Ruahine Ranges.
2. Activities in the area include campers/trampers/ fishers/walking/picnickers/mountain biking
3. The road end is used for camping / 1-3+ day parking / picnics/ an information board is located there.
4. Yeoman's track is the only mountain biking track in the whole of the Ruahine Ranges (52,000ha). It has moderate use (once a year on average by mountain bikers)
5. Current road end area and access point is on privately owned land and public access exists by good will of current owner.
6. DoC also has a pocket of land known as the Wakarara Block in the Gwava's forest area and the only access is via Wakarara Road end across the River and across Dutch Creek and into Leatherwood Road. This access will be lost with the dam. The Wakarara Block is a popular area for hunters.
7. The River is generally too low for jet-boating activities and kayaking.
8. DoC Staff say it is essential to retain public access.

DoC are keen to see access retained and see the proposal as an opportunity for formalising access to this part of the Park.

How these activities fit into the wider context of recreation activities in the Hawke's Bay

1. The most popular walk in the eastern Ruahine Ranges is Sunrise Hut and Dam proposal area is an extension of the Sunrise Hut area. DoC is currently focussed on maintaining and improving access in accessible areas such as these (as opposed to more remote backcountry routes).
2. This area is not as 'touristy' as Sunrise, nevertheless is an important area for relatively easy back country opportunities and due to the lower altitude suitable for all year round activities. It is still however visited by people from outside the region on a regular basis particularly for fishing and hunting.

3. Access from Sunrise Track into the wider Ruahine Ranges is limited, whereas Wakarara Road end provides more opportunities for access into the central Ruahine Ranges.
4. The area accessed from Wakarara Road end is currently used by generally more experienced trampers. For example schools that use Wakarara Camp will always tramp to Sunrise but won't necessarily go up the Makaroro River. If the dam proceeds there is potential to improve access and opportunity in this area.

.

What can be done to avoid, remedy or mitigate adverse effects on recreation?

DoC seeks to maintain access and road end activities for recreation activity to that area. If the dam goes ahead DoC see an opportunity for access and road end activities to be formalised including also relocating part of Yeoman's track on to land managed by Pan Pac. Pan Pac should be consulted for intended location of roads to service the commercial forest area.

Ideally this should also include space for a helicopter pad. DoC identified a number of alternative locations for achieving this:

1. On the flat area before the bend going down to current road end. This is where DoC currently helicopter into the Park. However it is close to the land owner's house and may therefore not be suitable.
2. Formalise road around lake edge to flat area approximately 1 km upstream of existing road end. This would be okay for access to Gold Creek and Barlow's Hut but would extend the walk into Yeoman's by 1 1/2 to 2 hours. This would effectively push it out of reach as a day walk for most people. It would still be a good mountain biking opportunity.
3. Formalise road further around lake edge giving better access to the upstream walks/fishing/4WD opportunities as well as closer access to Yeoman's track. (This is the preferred option). Possibly develop the paper road that is Glenny Road – to Gold Creek – or slightly closer to the water's edge.
4. Ferrying for access was discussed but discounted as not being feasible. It was however suggested that a camp site across the river, with access by kayaking could be an opportunity. These are proving popular overseas and could create a unique opportunity in the lower North Island. This is however depended on what is happening with the Panpac land (who might have its access cut off by the dam proposal).
5. Fishing - in lieu of what is lost, there is potentially improved access further up the Wakarara River which has good fishing spots.

Identify /characterise any new opportunities

1. Camp ground with kayaking access (unique - see above)
2. Formalised access further up the Makaroro River
3. Recreational activities on the lake - boating fishing etc.

Other comments

DoC advised they have an interest in this historic mill site (Wakarara Road end) and any treatment of the riparian margin below the dam site. Stella/Michele will pass that onto HBRC

Ruataniwha Recreation Assessment
Consultation with Forest & Bird, Hastings – pre-written notes given to Opus at meeting (in addition to discussion held)
16 December 2011

Users (recreational) - Current

* F&B day trippers going to Barlow's Hut and alternative route for Cold Creek Hut.

* Fly fishermen using Makaroa River for fishing & access further up.

Bird watchers / Ornithological Society activities on the river and access further up the river. To do watching, studies of bird life including Blue duck.

Kyak and canoe clubs activities on/up the Makaroa River.

Tramping clubs accessing the Ruahines

Casual (amateur) users studying & research
& - insects
- invertebrates
- bats
- fish. (types, stocks, health)
- Amphibians

New opportunities

Braided River → Lake environment albeit lake expands/contracts on a seasonal basis! Lake will be large with extensive shore line(s).

New

Boating sail? Motor? Jet ski
Water skiing Rowing?

Duck shooting, Fishing – fly, trawling

Diving: How to make use of the actual Dam ???

increased current activities

Hang Gliding, Mother-law-Thrills
↳ adventure sport.

Amateur gathering/studying/research on/for will be lots of mudflats, still areas/ponds marsh's.

- insects,
- invertebrates
- fish (native, game, eel, ...
- more duck varieties
- other bird life/types.

canoeing, kyaks, (lots more space)

?

solution

Need specified/allocated areas it will be a big lake.

Forest and Bird Hastings and Havelock North Branch

Field Trip – Sunday 16th March 2008- Leader, Barry Donkin

Barlow's Hut Northern Ruahine Park

To wander up the Makaroro River on a hot summers day when the river is low, and to swish through its waters as they hurry down to the sea over a wide shingle bed can be a welcome, cooling walk.

Most of the first hour is spent getting to the junction of the Gold Creek with the Makaroro River. This can be done by walking up the broad river bed. The flats beyond Craig's Hut were logged in the 1930's and re growth was destroyed by a wild fire in 1939, which converted them to "frost flats" on which only grass and wine berries would grows.

Judicious plantings of groups of Totara, Rimu and Kahikatea by the forest service has broken this inhibiting climatic effect, and these young trees will soon be producing seedlings to replenish the area.

Today's journey takes us up the Makaroro River for a further hour . On the way you will see the standing dead trunks of trees buried by river shingle. This river shows behaviour typical of an aggrading river. During a major flood tones of shingle are carried downstream and as the floodwaters wane, stones are deposited, big ones first, then finer shingle. In the months that following a major flood it is possible to drive a vehicle up the river, using the smooth shingle. But eventually a succession of minor floods washes away the lighter shingle to expose the larger heavier boulders, and the river bed again becomes rough.

The Makaroro Riverbed has risen (aggraded) considerably during recent decades, the greatest deposits being laid down during a massive flood in March 1975. This river has historical associations, for it was here that William Colenso and his bare foot Maoris traveled in 1845, on a journey to visit the Maoris on the other side of the range.

When leisurely wending your way up the river it is well worthwhile to ponder on this man and his prodigious walks he made in the course of his work.

Born in the Cornish town of Penzance, William Colenso came to New Zealand in 1834 when 23 years old, as a printer for the Church Missionary Society. Ten years later, after a close association with the Rev. W. Williams, he became a traveling missionary. He founded the Hawke's Bay Mission at Waitangi by Awatoto, and, with a parish that extended from Palliser Bay up to Mohaka, he undertook long Journeys on foot.

Colenso was also an enthusiastic and skilled naturalist, and during his travels found many new plants and insects which still bear his name. He became the first New Zealander to be elected a Fellow of The Royal Society.

Soon after taking up his commitment at Waitangi, he heard of natives living far inland over the snow capped Rauhines, and eventually found a native guide who agreed, together with six bearers, to accompany him over the range. He left on the 4th February 1845.

In all Colenso crossed the Rauhines seven times on his missionary work, and his route, probably an old forgotten native trail, became known as Colenso's Track. It is interesting to note that the Maoris on the western side were pretty hardy. In one village which he found under snow , the inhabitants were barefoot and clad only in loose shoulder mats. They sat talking with hardly any fire, and the children romped naked in the sleet and snow, and although living on the seasonal fern root, everyone seemed healthy.

William Colenso was a founding member of the Royal Society. Despite its grandiose name, this is simply an association of people interested in science.

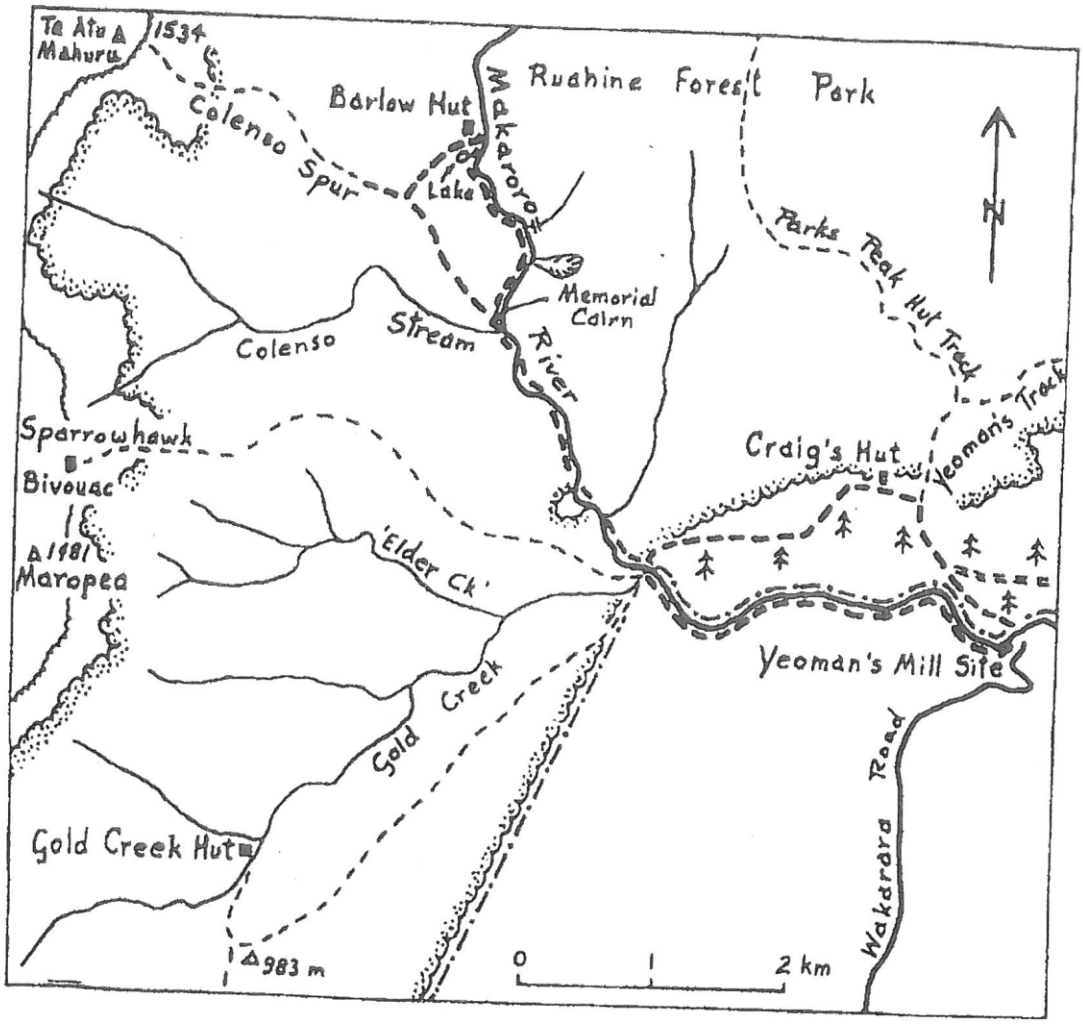
To mark its centenary in1975, members of the society constructed a small memorial cairn in the bush at the foot of Colenso Spur. The cairn is right on the track, which is sign posted. From here, a further half hour's walk up the river will bring you to Barlow Hut, a fine Fraemohs-type building erected in 1983. It is identical to the well known "Sunrise" hut near Armstrong Saddle.

Barlow Hut is named in honour of the Barlow family of Wakarara. James Barlow took up land bordering the Makaroro in 1881.

Have a wonderful day

Acknowledgements

Information from previous trip sheet Bobbi Couchman


Te Atu
Mahuru
1534
Colenso Spur
Barlow Hut
Lake
Makaroro
Ruahine Forest Park
N
Parks Peak Hut Track
Memorial Cairn
Colenso
Stream
River
Sparrowhawk
Bivouac
Craig's Hut
Yeoman's Track
1981
Maropea
'Elder Ck'
Yeoman's Mill Site
Gold Creek
Gold Creek Hut
Wakarara Road
983 m
0
1
2 km

Ruataniwha Recreation Assessment
Consultation with Heretaunga Tramping Club
10 January 2012

Attended by:

HTC: Alan Berry;
Raewyn Ricketts

Opus: Michele Frey;
Stella Morgan

Michele outlined the project and the purpose of consultation.

In response to the pre-circulated questions Alan and Raewyn made the following comments:

Recreational activities and issues

1. Yeoman's Track and Ellis Hut have historic value. A 'mid range walk'.
2. Colenso Track also has historic value. A 'mid range walk'.
3. The track to Barlow's hut return is a 'mid range walk'.
4. Pohatuhaha is more of a 'route track'.
5. The key effect of the proposal on tramping in the area is potential loss of access to:
    - Yeoman's Track/Ellis Hut
    - Pohatuhaha Ridge
    - Gold Creek and beyond that, Colenso Spur and Barlow's Hut

Alternative access could be achieved by:

(i) A formalised track around the edge of the proposed lake and/or

(ii) Access across private land (Hall's) from the Glenny Road end to Gold Creek

A lake track would provide secure access to the Park but would add an additional 5 kilometres on to the 16-18km return trip to Ellis Hut and Yeoman's track. This would make it less appealing as a day trip.

Access via the Hall's property is currently by their agreement.

How these activities fit into the wider context of recreation activities in the Hawke's Bay

1. These areas can be compared to the Makahu access to the tops (Kaweka's) and Kaweka Flats.

2. Sunrise has its own unique qualities.

3. Any loss of access to tramping tracks in the Hawke's Bay is significant as there are limited opportunities for day bush walks and access to the Ruahine Ranges as it is currently.

What can be done to avoid, remedy or mitigate adverse effects on recreation?

Ensure access (that is feasible for trampers) is retained

Possibly designate an access point/clear route along the edge of the proposed lake ensuring access is maintained to these areas.

Identify /characterise any new opportunities

HTC prefer that access to the tramping tracks be maintained.

Other comments

- Previously a forestry bridge existed across the river (at the current car-parking area/arrival point).
- HTC estimate 50 people use this area on a formal basis annually.
- November is a particularly pleasant time for walking in the area (Yeoman's Track) due to clematis and green hooded orchids flowering.

Ruataniwha Recreation Assessment
Hawke's Bay Mountain Biking Club
Wednesday 1st February 2012

Attended by:

Hawke's Bay Mountain Biking Club
Opus: Stella Morgan

Stella outlined the project and explained the purpose of the recreation assessment.

In response to the pre-circulated questions the following comments were made:

Recreational activities and issues:

Yeoman's track is a mountain bike track suitable for family use however the current access (having to cross the Makaroro River) limits it to keen bikers.

Yeoman's is the only DoC mountain bike track in the whole of Hawke's Bay.

Access is the ongoing issue for mountain bikers. There are only two access points into the park- at Wakarara Road End or via Big Hill Station. (Club to provide Opus with map showing this).

HBMBC concerned that under the proposal to develop a dam at this site they will lose access to this track. Alternative access will need to be provided.

A key concern is the potential that may be lost through this proposal. Currently HBMBC are in discussion with DoC about future mountain biking opportunities including linking Yeoman's Track through to access from Big Hill Station which has a paper road running through it. This would create a significant riding opportunity. But if access is lost at Wakarara Road end this opportunity would be affected.

How these activities fit into the wider context of recreation activities in the Hawke's Bay

Yeoman's track is the *only* mountain biking track on DoC land and for this reason HBMBC consider it unique. Mountain biking is growing in popularity and there is a demand for tracks. HBMBC is one of the largest in New Zealand and membership is growing.

.

What can be done to avoid, remedy or mitigate adverse effects on recreation?

Alternative access needs to be provided.

Identify /characterise any new opportunities

The current access restricts the use of the track; there is opportunity to develop improved access than currently exists.

Appendix 2: Literature Review

Appendix 2: LITERATURE REVIEW

1. Texts With Reference to Makaroro River

Tukituki Catchment Values Setting HBRC Draft Dec 2011

This report forms part of background material for a proposed Plan Change to the Regional Resource Management Plan with respect to the Tukituki River Catchment seeking to set specific water quality limits in the Tukituki catchment. It identifies river values across the catchment and assigns levels of significance. The Makaroro sub-catchment is identified as T17. H= high; M= Medium; L= Low.

It should be noted that this report is still in draft stages, no community consultation has been undertaken on this value setting to date but relevant agencies have been involved where appropriate. The information has been pulled from in house information, knowledge and expertise, as well as the various regional values setting workshops that have been undertaken as part of the RiVAS work. The RiVAS work has not yet been written up.

The public advertorial accompanying this report highlights that Water Storage (proposed irrigation damming) has also been identified as a way of returning the river to natural summer flows if all existing irrigation was migrated to storage and could potentially improve water quality.

Makaroro Sub-catchment T17		
Value	**Significance**	**Comment**
Trout Spawning habitat value	H	One of 5 out of 17 catchments valued as H for this value (includes upper Waipawa)
Key Trout habitat	H	One out of 10 of 17 catchments valued as H for this value (includes Waipawa)
Wetlands	M	5 catchments valued as High, 12 as medium (Waipawa valued as H)
Birdlife	M	One of 8 areas assigned significance for this value (Waipawa also M)
Braided River (ecological setting)	H	4 out of 8 braided rivers ranked as high significance for this value (includes upper Waipawa)

Swimming-

Subcatchment	Location	Level of Use	Overall significance
Makaroro	Makaroro under bridge	2	15

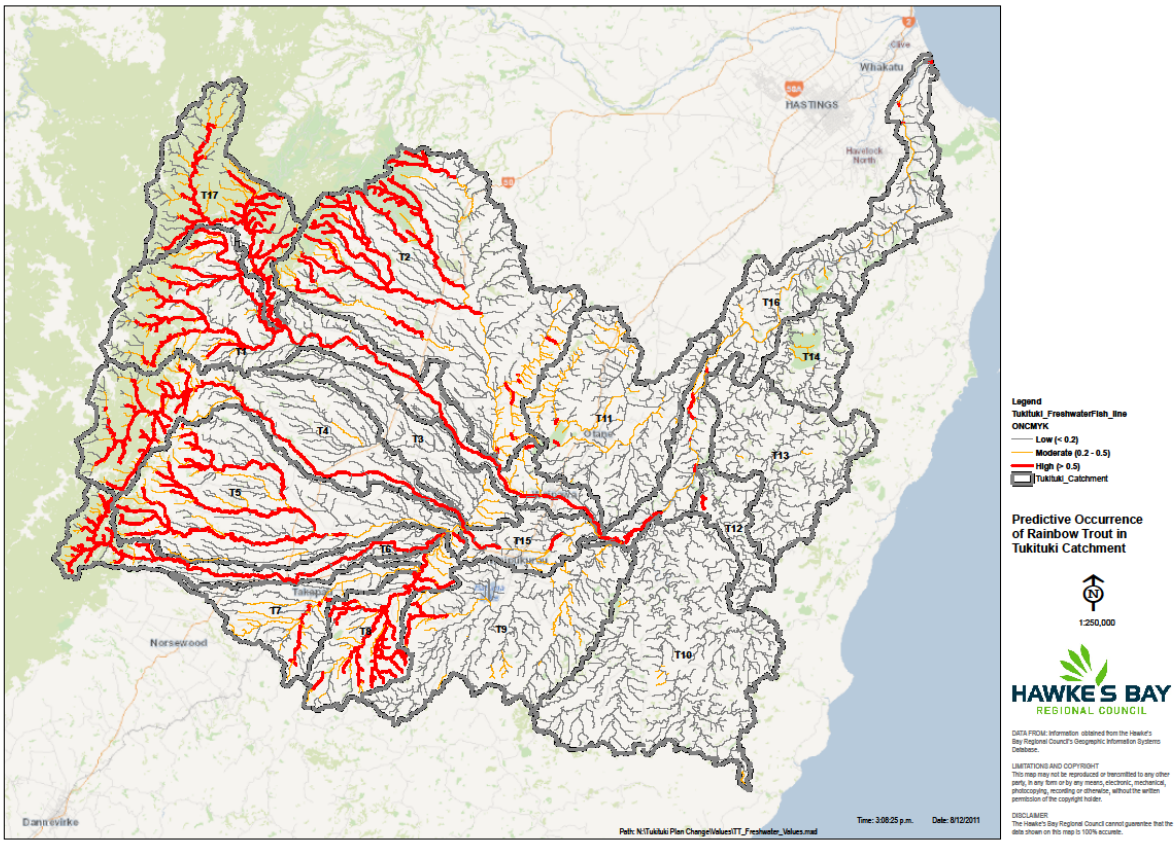
Natural State- based on the presence of Department of Conservation estate and QE11 covenanted land within the sub-catchment:

Ha	% of sub-catchment
17,016	49.03

Of all the sub-catchment within the Tukituki it has the highest level of natural state, significantly higher than the second most natural state the upper Tukituki with 9,769 ha and the Waipawa with 9,790 ha.

Overall The Makaroro has high values for trout, and is recognised as having' high' importance for its natural state, and braided river ecology. While other tributaries to the Tukituki River also have a similar range of high-medium values, this catchment has significantly higher natural state than other catchments and it is this that makes it important as a regional recreation asset.

Appendix 5 - Predictive Occurrence of Rainbow Trout.



This map shows the importance of the Makaroro sub-catchment for Trout, therefore it can be assumed to be an excellent fishing area.

<u>Whitewater Kayaking in Hawke's Bay: Application of the River Values Assessment System (RiVAS)' Report (dated Nov 2010)</u>

The 'Whitewater Kayaking in Hawke's Bay: Application of the RiVAS' report (Nov 2010), endorsed by an expert panel of kayakers, states that it is 'a useful first step in identifying the value of Hawke's Bay rivers for whitewater kayaking' but that the assessment 'is neither intended, nor robust enough, to be used definitively in the RMA resource consenting process' .

To provide context, the reach of the Makaroro River between the end of Wakarara Road and the confluence with the Waipawa River, has been identified as containing river reaches that are kayakable, and has a whitewater difficulty grading of II. The international scale of whitewater difficulty (Charles 2006: 14-15) describes Grade II as "easy rapids with waves up to one metre. Clear channels obvious without scouting. The ability to move your craft across the current is not necessary". In terms of number of users, it is estimated as likely less than 100 kayaker days per year.

The Makaroro River scores 'low' in terms of scarcity of kayaking opportunity (score: 1), i.e. the type of kayaking experience on the Makaroro River is not scarce, which reduces its relative kakaying opportunity value. It also scores 'low' in terms of assessed 'user perception of scenic attractiveness' (score: 1) and 'perception of wilderness character' (score: 1). It does however, score highly in terms of 'ease of access' (score: 3).

Overall, this reach of the Makaroro River is identified as valued for whitewater kayaking in Hawke's Bay, but is ranked towards the bottom of the list of the 32 rivers and river reaches identified, with a river kayaking value of 'low'.

'Salmonid Angling in Hawke's Bay: Application of the River Values Assessment System (RiVAS)' Report (dated May 2011)

The draft 'Salmonid Angling in Hawke's Bay: Application of the RiVAS' report (Draft, May 2011), endorsed by an expert panel of anglers, states that it is about assessment of recreational angling value (not the value of the fishery itself – for spawning or summer refuge, for instance). The report states that 'data is absent for some rivers and severely outdated for others', and is therefore 'a best estimate only, given the limitations of existing data' and 'is not intended to be used definitively in the RMA resource consenting process'.

To provide context, the Makaroro River is a tributary of the Waipawa River which is tributary of the Tuki Tuki River. The Tuki Tuki River has the greatest number of angling days per annum of the river catchments in the Hawke's Bay Region, from source to sea (14,000 angling days). Of the Tuki Tuki River tributaries, the Waipawa River has the greatest number of angling days per annum (1315.2 angling days). The Makaroro River has 25.73 angling days per annum.

The Makaroro River is at the low end of the range for number of angling days for rivers in the Hawke's Bay Region, and has a low 'intensity of use' score (the report states that "high intensity implies high value" (Appendix 3 Assessment of Indicators)).

The Makaroro River has low and medium scores for the majority of the assessment criteria used in the RiVAS Report to determine overall significance. Interestingly, it does score highly (score: 3) in terms of angler perception of scenic attractiveness. It also scores 'medium' in terms of angler perception of wilderness (score: 2), however the angler perception of overall importance of the river is low (score: 1). These three criteria are identified in the RiVAS report (Appendix 3) as known to influence choice of angling site.

The overall ranking of the recreational angling significance of the Makaroro River for salmonid angling is low (score: 1).

River Swimming in Hawke's Bay: Application of the River Values Assessment System (RiVAS)' Report (no date)

The 'River Swimming in Hawke's Bay: Application of the RiVAS' report (no date??), endorsed by a panel of experts.

The area under the bridge on the Makaroro River is included in the list of identified swimming sites of local and regional significance for Hawke's Bay. The list of swimming sites was developed using the list of Council water quality monitoring sites, information gathered from high schools and local knowledge. Sites where people swim which are not listed have only highly localised swimming values.

Each local/regionally significant swimming site was assessed against a list of attributes and indicators including, water clarity, swimming hole depth, variable water depth, algae compliance with national guidelines, scenic attractiveness, origin of users, number of swimmers per day, and presence of facilities.

The Makaroro River swimming site scores 'high' for scenic attractiveness (score: 3), 'medium' for water clarity, variable water depth, algae compliance, and level of use (score: 2), but 'low' for swimming hole depth and the presence of facilities (score: 1), **giving an overall 'medium' local and regional significance for swimming.** For regional comparison, examples of swimming sites assessed to have 'high' significance in Hawke's Bay include the Ngaruroro River at Kuripapango, the Mohaka River at Te Puia Hut, the falls at Maraetotara, and the Sunshine Falls at Boundary Stream.

<u>Tukituki Catchment Terrestrial Ecology Characterisation Report MWH 2011</u>

- Dam area falls within **'Catchment Unit C'** for terrestrial ecological character **(Figure 1.1, pg 2).**

"6.1.3 Catchment Unit C
An ecologically important component of the Unit's land cover is the remnant indigenous forest and other indigenous scrub and tall tussock grassland, which collectively occupies around 11% of the Unit. Exotic grassland dominates, occupying over 80% of the Unit's area. With the dominance by exotic pasture grassland comes dominance of Land Environments of 'Acutely' and 'Chronically' Threatened status. Areas of land on the Wakarara Range represent the 'Less Reduced and Better Protected' category.

In terms of rare/uncommon habitats, this Unit contains around 40% of all the Catchments wetlands (and 10% of the Catchments wetland area), around 10,000ha of woody indigenous vegetation (a large proportion of this being lowland forest) and more than 400ha of gravel riverbed habitat. The Unit contains the highest number of sites recommended by the DoC as RAP238 or SSWI239.

Indigenous forests on higher ground towards the ranges in the western area contain red beech, then as one moves to the east the red beech component phases into black beech. Podocarp and broadleaved species are present in the forest composition throughout. Totara treelands are known to host the rare orchid *Ileostylus micranthus.*

Blue duck almost certainly occur infrequently within the upper sections of the Makaroro River, anecdotal reports suggest they may have been seen around the Makaroro/Dutch Creek confluence in the past. New Zealand falcon is common with a number of records throughout the Wakarara Range, Triplex Creek and Gwavas Forest. New Zealand pigeon, tui and bellbird are represented by good sized populations throughout the Unit. Other common forest birds are widely distributed throughout a range of habitats. Kaka are occasional visitors to the Unit, seeking out food or finding refuge from unfavourable weather conditions in the more common mountain habitats. Long-tailed and shining cuckoo are present, as are their nest hosts whitehead and grey warbler (respectively). Tomtit can be locally common and were noted as being so on Smedley Station. North Island robin are recorded from Gwavas Forest, but not in other forest patches of the Unit. Pipit occur in the Gwavas Forest area and are likely present in rough pasture and gravel riverbeds. Riverbeds hold both banded and black-fronted dotterel and farm ponds with large muddy margins and wet-boggy fields are also likely hold black-fronted dotterel. Pied stilt would use these habitats as well. Fernbird distribution is likely very limited, with records and sightings relating to Gwavas Forest, Makaroro Heath and Makaroro Oxbow Swamp.

Common skink and common gecko were detected from surveys on Smedley Station. Other anecdotal and formal records suggest that the Unit holds populations of southern North Island forest gecko and Wellington green gecko. It is also possible that spotted and southern North Island speckled skink is present, and there is potential for sparse occurrence of small-scaled skink.

Bats (presumably Long-tailed bat ('North Island')) have been recorded by DoC from seven different indigenous forest patches within this Unit. Of those sites where bats were detected in the Unit, bats were encountered in at least 57% and up to 100% of survey transects." **(pg 95/96).**

6.2 Risks to river birds from changes in flow regime

Braided riverbeds are rare and significant habitats. Most of the Tukituki and Waipawa riverbed were designated RAPs during the PNAP surveys. To add to the river's significance is the fact that it holds species from all eight of the water bird guilds.

The number of banded dotterel on this stretch of river make this the largest population of this Nationally Vulnerable species compared with any other Hawke's Bay river; and this river may hold almost 5% of the national population. Add to this the population of pied stilt which might be around 3-4% of the national population and probably around 50% of the regional river based population, and the occurrence of other threatened species such as white heron, Royal spoonbill, grey duck, South Island oystercatcher, black-billed gull, Caspian tern, white-fronted tern, and New Zealand pipit, and the significance of this riverbed (above the estuary) is clearly apparent.

Maintenance of flow regimes on rivers is essential for maintaining accessible food supplies, and the feeding and nesting habitat of river birds dependent on freshwater, particularly threatened species.

In particular, maintenance of flows as close as possible to natural regimes during the critical breeding months (August to January) will help to ensure that the full range of channel types required for birds are present. However the effect of disruption of flow regimes is unlikely to be completely predictable. Likely effects to avifauna are outlined below:

Generic (non-project specific) effects:

- Food web effects from water quality and flow related influences on invertebrate communities.
- Direct loss of bird habitat due to inundation at reservoir sites.
- Flooding of nesting sites from untimely water releases.
- Changes in flood frequency causing any of the following: channel stabilization, reduction in food availability, weed encroachment and loss of wetted area.
- Sediment trapping, reduced sediment loads and effects to river morphology and linked effects to bird habitat and invertebrate communities (food availability).
- Changes in the availability, security and character of 'island' habitats.
- Changes in river morphology demanding the need for additional flood control activities.
- Changes to bird nesting location, birds forced to nest on lower level sites more consequently vulnerable to flooding (caused by a range of factors linked to river flows).

An example of potential effects from Ruataniwha Augmentation Scheme:

Construction phase:

- Physical disturbance to birds within and close to the development area through machinery noise, activity and alteration of flow regimes. Effects potentially pronounced during birdbreeding seasons.
- Loss of habitat from inundation. Includes riverbeds and riparian habitats.
- Impact to landscape pattern and process from habitat loss. Changes to the available habitat for mobile species potentially reducing their viability and restricting related ecological functions.
- Effects to river birds from reduced downstream water quality (e.g. from sediment discharges to the rivers water column) and consequential changes in food availability.
- These effects perhaps more pronounced during river 'low flow' periods.
- Changes in river flow quantity during reservoir filling and consequential effects to river birds from factors such as water quality, flood/fresh frequency and the influence of these factors on river bird habitat and food availability.

Post construction phase:

- Effects potentially similar to those outlined for the construction phase, only in addition:
    - Effects of reservoir water quality on invertebrate communities and potential influence on river bird food availability.
    - Reservoir water level fluctuations and impacts on birds using the reservoir and surrounding areas.
    - Reduced flows from the additional construction of a hydro-power race." **(pg 98/99)**

"Catchment Unit C is an interesting area, with climate, topography and habitat retention providing the setting for an ecologically important pattern between the more intact upper catchment and highly modified middle and lower catchment." **(Section 4.1 Local Application, pg 84).**

5.1.1 Bird species, numbers and regional/national significance of the riverbed for birds

Braided riverbeds are a rare habitat type internationally207, and although a number exist in the South Island, they are not common in the North Island. The riverbed of the Tukituki River is renowned for its wildlife values, having been listed as 'high' during the SSWI surveys208. Reasons for listing the riverbed as a SSWI were stated to be due to it having "the highest number of waders" compared to the other Hawke's Bay rivers, and also because "*black-billed gulls were more common on this river than elsewhere, and three nesting sites were seen. Black-backed gulls were fewer and the colonies were smaller than on the Ngaruroro River. Waterfowl were more common than on the other rivers, particularly on the lower half of the river.*"

Subsequently, most of the Tukituki and Waipawa riverbed were designated RAPs during the PNAP surveys210. The RAP extends from the confluence of the Makaroro and Waipawa Rivers, and the Tukituki River from near the top of Tukituki Road, right the way down to the rivermouth. This is a very sizeable and significant area, and is listed due to "*its valuable riverbed habitat supporting high numbers of waders and wetland birds*".

To add to the river's significance is the fact that it holds species from all eight of the water bird guilds. Although recent surveys of the riverbed have not been conducted, the numbers of riverbed birds are likely to be similar to those recorded in past surveys (Table 5-1). Table 5-2 lists numbers of these birds with comparisons of the other Hawke's Bay rivers during the 1984-85 and 1986 surveys.

The number of banded dotterel on this stretch of river make this the largest population of this Nationally Vulnerable species compared with any other Hawke's Bay river. The population recorded during the 1986 survey, based on current population estimates of possibly as few as 25,000 birds, would suggest this river may hold almost 5% of the national population (and probably around 55% of the regional river based population).

Add to this the population of pied stilt which might be around 3-4% of the national population (based on c.30,000 birds from Heather & Robertson (2000) (and probably around 50% of the regional river based population), and the occurrence of other threatened species such as white heron, royal spoonbill, grey duck, South Island oystercatcher, black-billed gull, Caspian tern, white-fronted tern, and New Zealand pipit the significance of this riverbed (above the estuary) is clearly apparent. Any changes to flow regime and river management therefore need to be carefully scrutinized before being allowed.
(pg 87).

<u>Hawke's Bay Rural Open Space Study Resource Assessment July 2007 Environmental Management Services for Hawke's Bay Regional Council</u>

This report presents the findings of a review of the supply of public open space in the Hawke's Bay Region. The objective of the study is to define the nature and diversity of existing public open space and assess where any deficiencies may exist across the Region. It is intended that the results of the study will be used by the Council in the development of an overall policy and vision for regional public open space. The aim of developing a policy of this kind was flagged by the Council in the 2006 LTCCP.

Relevant key findings from this study include:

- ***Findings of Previous DOC Studies – a lack of 'near-urban' open space***

  The last region-wide recreational opportunity assessments for Hawke's Bay were completed by the Department of Conservation in 1991 and 1994. These studies were based on the ROS assessment method. One of the main conclusions was that Hawke's Bay is mainly lacking in the supply of 'near-urban' public open space[1]. The studies found that there is an abundance of remote forest country (Hawke's Bay has about 400,000 hectares of Forest Park and National Park land in the Kaweka, Ruahine and Urewera ranges) but not enough access to open space in close proximity to the main urban centres – notably Napier and Hastings.

- ***Progress Since 1994 – opening up the river banks***

  Since 1994 the situation has significantly improved – mainly as a result of Regional Council initiatives from 1996 onwards to enable better public access to Council-owned lands alongside the major rivers near Napier-Hastings and Waipukurau-Waipawa. Associated with this has been the joint council programme of walkway/cycleway development in the Napier-Hastings-Havelock North area. Napier City Council have also been actively working on a programme of walkways and cycleways along the coast and across the Taradale Hills. In Wairoa, a 5km walkway/cycleway is being established along the lower Wairoa River. All of these initiatives have been adding to the range of places to go and things to do in the outdoors within a short distance of the main urban centres.

[1] The DOC report uses the term 'peri-urban'. This has a specific meaning in the classification system used by DOC but is similar in effect to the term used here. The 'near-urban' area is broadly defined as being within 15-20 minutes drive of an urban centre and providing opportunity for outings of typically 1 to 3 hours duration.

- ***Progress since 1994, mostly achieved with existing public land***

  The majority of this progress has in fact been achieved by using existing public land. The one exception is the Taradale Hills walkway project under which walkway easements are being progressively acquired through reserve contributions upon subdivision of adjoining land.

  More opportunity remains. There are still a number of existing public lands that are under-utilised and little-known. These include the Heipipi Pa site at Bay View, the Whakamaharatanga Walkway (off Onehunga Road at Bay View), Waikare Beach camping area near Putorino and Tawapata Road at Mahia (a paper road providing access to the eastern coast of the Peninsula). There is also potentially the development of better access to DOC land on the upper Ahuriri Estuary (although this has so far been resisted by DOC and also has possible constraints in respect of the unclear extent of Landcorp land, and possible objections from Landcorp.

- ***Private Initiatives – mountain bike parks***

  There have also been some 'private' initiatives over the last 10 years. Pan Pac Forests Ltd have permitted the establishment of a 287 ha mountain bike park in one of their forests in the lower Esk Valley (along with a down-hill course in forest at Aropaoanui). A small mountain-bike park has also been created on P F Olsen forest land near Waipukurau. Access is available to paid-up members of the Hawke's Bay Mountain-biking Club. It is important to recognise, however, that these 'private' parks exist only with the on-going support of the respective landowners. While they provide an important recreational resource there is always the potential for access to be lost at some time in the future in the event of a change of ownership or management policy.

- ***Supply of 'Near-Urban' open space is still a priority***

  These various initiatives (both public and private) have gone a long way toward answering the deficiency in 'near-urban' open space in the Region identified back in 1991 and 1994 – although the demand for 'near-urban' outdoor space remains strong. Any well-sited open space that is provided near to urban centres is likely to be intensively used. As a general rule, there is a higher demand attached to public open space that is near to urban areas compared with space that is further away. Proximity to an urban centre should be regarded as an important factor in the overall weighting given to alternative options for extensions to the current resource of public open space – with overall weighting being proportionate to population size in individual centres.

  Part of this demand derives from a deficit of public open space within urban areas themselves. The Hastings Reserves Strategy (2006) identifies a shortage of urban open space, specifically in Hastings and Havelock North, and observes that people are inclined to look outside the cities to satisfy this demand. Similar observations were made in the DOC reports of 1991 and 1994.

- ***Coastal Access is patchy and needs attention***

  The other high priority is for access to coastal areas. Coastal access is patchy – especially beyond the 'near-urban' range of within 15 – 20 minutes drive. In some cases we have found that well-used 'public' areas are in fact on private land. In other cases land that is sign-posted as 'private' may actually be public. Elsewhere there may be opportunities for new

access to be negotiated over private land to rectify existing constraints. Specific examples are as follow:

- Tangoio: There is a strip of private land separating the road-end at Tangoio from the start of the public reserve land leading to Flat Rock and beyond[2].
- Ocean Beach: Legal road access is still be negotiated between Hastings District Council and the landowners over whose land the formed road passes.
- Cape Kidnappers to Ocean Beach: There is no foot access around the Cape. Access is blocked by cliffs and by private land.
- Cape Kidnappers: The main Gannet colony is on private land.
- Tangoio to Waipatiki: Very difficult inter-tidal access north of Kirikiri Bay Stream. Negotiated access via Pan Pac forest land would enable a connection to be made right through.
- Waipatiki to Aropaoanui: Has formed access but passes through private land.
- North of Aropaoanui: The current legal status of the 'paper road' (former coach road) north of Aropaoanui is unclear. There are also problems with slips.
- Waikare & HB Coastal Walk: The Hawke's Bay Coastal Walkway from Waikare to Aropaoanui is now effectively closed, due to slips. The Dept of Conservation are not intending to repair it or search for alternative routes.
- Mahia Peninsula: Only 20% of the Mahia Peninsula coastline can be accessed by the public. This is partly because paper roads (or what our investigations strongly suggest are paper roads) on the eastern side of the peninsula have been blocked off with private trespass signs erected. Foot access may be viable if the true status of these paper roads can be resolved.
- Central Hawke's Bay Beaches: In Central Hawke's Bay 80% of the coastal land above the foreshore is privately owned. In most cases this does not appear to seriously constrain access (with adequate access generally provided by the foreshore itself). However, a more detailed examination is required.

There is a case to be made for undertaking a comprehensive detailed review of access to the whole of the Hawke's Bay coastline.

- ***Marginal Strips are not required all along the whole coast***

Note that in many cases the coastal foreshore provides sufficient public access on its own. It should not be assumed that a marginal strip is always necessary for people to get along the coast. As long as the foreshore is walkable, and it is possible to get through without being caught by the rising tide, then that is often all that is needed. The Cape Kidnappers coastal walk, for example, is tide-dependant. This aspect of the trip to the Cape, if anything, only adds to the overall experience of the journey. The same could be said of Cray Bay, south of Waimarama, which is one of the top surfing bays in the Region. Public access involves a 40 minute walk along the coast from Waimarama. Some surfers regard the long walk as a nuisance. Others see the walk (and therefore isolation) as integral to the uniqueness and charm of Cray Bay.

- ***Coastal camping space is short and in high demand***

Coastal space is also highly sought-after for recreational camping. There is insufficient space available during the summer holiday period to cater for demand. The situation has been

[2] Discussions with HDC suggest that this may be about to be resolved. Not yet confirmed.

made all the more intense by the sale and subdivision of former camping grounds at Blue Bay (Opoutama) and Aramoana, and by a prohibition on freedom camping introduced at Mahia. The shortage of camping space is further fuelling the demand for permanent baches, as people fear that they may otherwise be excluded. This in turn is driving the incentive for other private camping grounds and private coastal properties to be sold and subdivided for exclusive individual use.

The supply of coastal camping space is presently being catered to mainly by private camping grounds, but also by the Department of Conservation (at Waikare), and to varying degrees by the District Councils. Central Hawke's Bay District Council have generally supported freedom camping. Wairoa District Council are discouraging it. Hastings District Council are catering for motor-homes only. There are currently no Regional Council camping areas on the coast.

There may be scope for a greater future involvement by the Regional Council in the supply and management of coastal camping. If so, this would need to be in partnership with DOC and the District Councils, and in consultation with private providers. This is a more complex issue than might first appear, and would need to be carefully considered. It would, nevertheless, help to meet a clear existing demand, and could be tied in with the current Department of Conservation strategy for the procurement of coastal camping sites.

- ***Further work required on coastal access – short and long term***

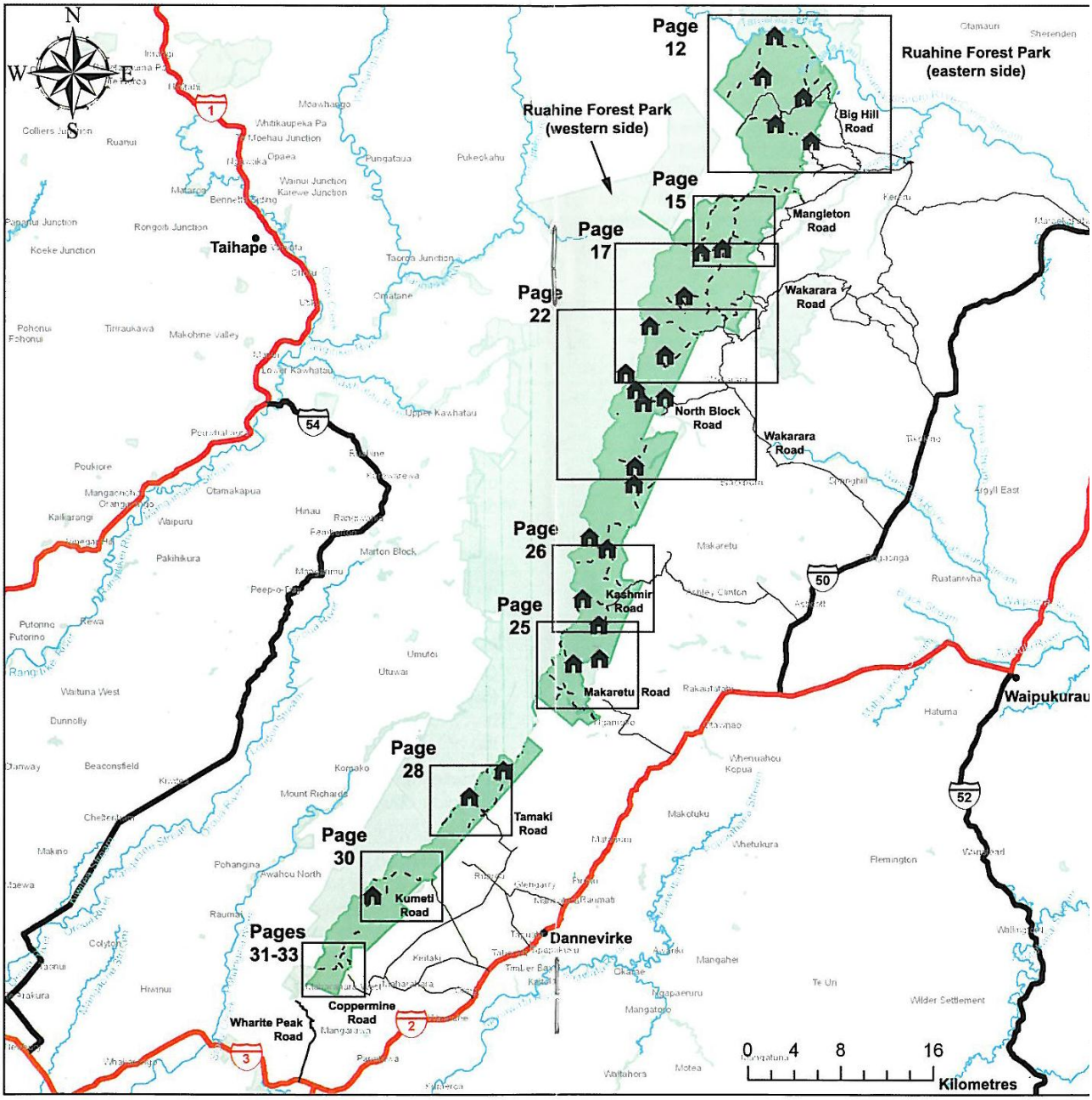
  Altogether, the coastal access and coastal camping issue is an area where much more work and analysis is required. There are a number of sections of coastline where attention to access issues is required and where action could be taken soon. Over the rest of the coastline the desirability (or otherwise) of better access needs to be considered in context of each particular stretch of coast and what role that section serves in the overall spectrum of recreational experience on the coast. In some cases better access above the foreshore would be beneficial – especially where access would otherwise be physically impossible or dangerous. In other cases it will be preferable for access to stay along the foreshore only, and possibly subject to tides. Elsewhere, as when long coastal journeys are undertaken (over-night or between tides), there may be value in providing areas where walkers can camp or wait out the tide on land above mean high water springs, or get access to an exit point. A comprehensive, detailed coastal access and camping strategy is required.

- ***River access is generally good***

  River access, throughout the Region, is generally good. Access to the headwaters of all of the major rivers is possible through State Forest Parks and there are sufficient access-points in the lower sections of the each river to enable foot access along virtually any reach. In some cases a significant amount of effort is required. However, this serves to then differentiate more-visited from less-visited sections of river and the type of opportunity and experience associated with each. It is not actually desirable that all sections of river should have very easy access. Fish & Game NZ have indicated that they think the existing level of access is reasonably well balanced. While it is always useful have more marginal strips created, where and when opportunity arises, this should not be considered a high priority.

Eastern Ruahine Forest Park Central Hawke's Bay Information Brochure DoC

This brochure identifies Wakarara Road end as one of 5 entry points to the Central Eastern Ruahine's or one of ten along the whole eastern length stretching from Dannevirke to Kereru (Ngarururoro) approximately 100km. Refer map brochure:



2. National Texts with Reference to Hawke's Bay

White Water NZ
http://rivers.org.nz/nz/hawkes-bay

This website contains information on 307 sections in 185 rivers. 60% of the sections have attributes filled.
For Hawke's Bay it identifies the following rivers as of significance for white water sports:

- Mohaka
- Ngarururoro
- Ruakituri (Wairoa)

- Waikaretaheke (Wairoa)
- Tutaekuri (Taihape Road)
- Taharua (Napier - Taihape Road)

This site notes the importance of taking into account minimum water quality levels as well as minimum water flows as criteria for stopping or restarting water takes for white water kayaking.

Protecting New Zealand's Rivers New Zealand Conservation Authority Apr 2011
http://www.doc.govt.nz/publications/getting-involved/nz-conservation-authority-and-boards/nz-conservation-authority/protecting-new-zealands-rivers/

This publication discusses recreation values for rivers as follows:

'Recreational use of rivers encompasses a wide range of activities, including both water-based recreation ('wet' activities) and land-based activities ('dry' activities). Water-based recreation includes swimming, boat-based activities (especially jet boating, waka ama, kayaking and rafting), and biota-based recreation (fishing and whitebaiting). Land-based activities vary from passive recreation to walking the dog and playing with children. The maintenance and enhancement of public access to and along rivers is a matter of national importance under RMA section 6(d).

The use of rivers for recreation is difficult to quantify. A lack of data precludes statements about the number of visits to rivers for recreation. The exception is freshwater angling: an estimated 727,400 angler-days per annum occur on New Zealand rivers[34]. Recreation participation data suggest land-based activities, especially walking, may attract much larger numbers of people than water-based activities[35].

The recreational value of rivers is not limited to existing use. Also relevant is the potential for future recreation opportunities that do not currently exist. Such opportunities may result from improvement to environmental factors (e.g. better water quality, a different flow regime or an improved fishery), technological advances (e.g. new boat designs that can navigate previously inaccessible rivers), enhanced access (by foot, vehicle or air), and improved management (e.g. provision of boat ramps or the removal of restrictions). The issue associated with potential value is to avoid precluding future opportunities.

Consent authorities have a statutory role to consider recreation under section 7 of the RMA, where those exercising the functions and powers of the RMA must have particular regard to (amongst other things) the maintenance and enhancement of amenity values, and the maintenance and enhancement of the quality of the environment.[36]

[34] Unwin M (2009)-data relate to the 2007/08 fishing season.

[35] SPARC (2008).

[36] Section 2 of the Resource Management Act 1991 defines "Amenity values" as "those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes".

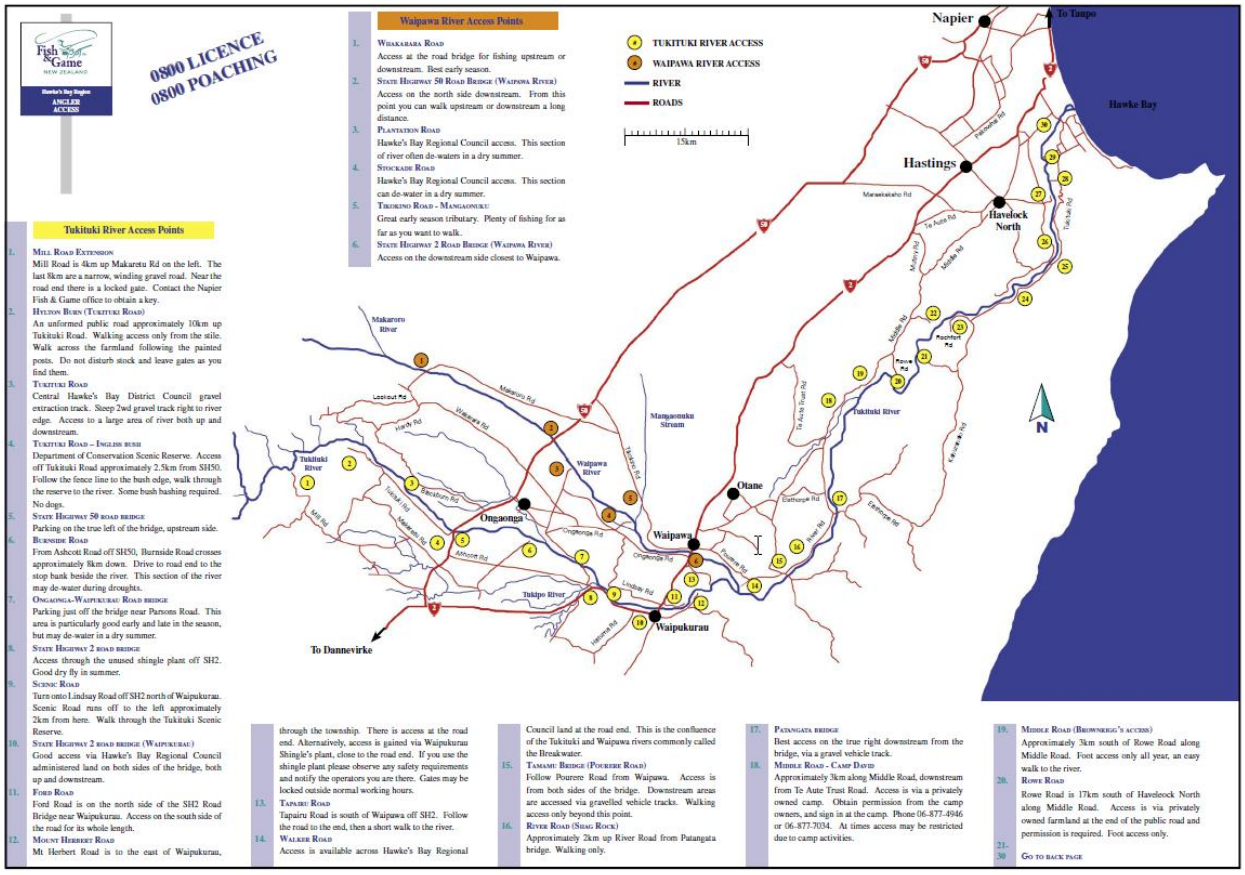
"Environment includes-

- *(a) ecosystems and their constituent parts, including people and communities; and*
- *(b) all natural and physical resources; and*
- *(c) amenity values; and*

- *(d) the social, economic, aesthetic, and cultural conditions which affect the matters stated in paragraphs (a) to (c) or which are affected by those matters".'*

Appendix 5: Water Conservation Orders (as at April 2011)
This schedule lists 16 rivers that are protected Mohaka is the only one in Hawke's Bay.

Maps 1 & 2: Hawke's Bay Fish and Game Access pamphlets Waipawa River
http://www.nzfishing.com/AboutFishingInNZ/FGRegionalPamphlets/HBpamphlets.htm



Typical Tukituki River Scene
Photograph by **Heather Mckenzie**

Middle Tukituki River

From Waimarama Road bridge to the Tukipo River confluence the Tukituki River offers a huge variety of fishing. There are plenty of fast runs that are ideal for spin or nymph fishing, larger pools and willow-lined banks that hold big brown trout. Mayfly hatches are common throughout the day in summer. Sight fishing is possible in normal flows with trout moving constantly through this section to/from upper reaches. The river is wide in places and braided and can change frequently throughout the year although productive water is never far away.

Upper Tukituki River

Upstream from the Tukipo River confluence the river is small and willow-lined. Sight fishing with light fly and spin fishing gear is the most successful way to fish this area. There is not generally a high density of trout in this section, but the surroundings and solitude will make it worth the effort.

Upper Tukituki River *Photograph by* **Dave Hern**

Tributaries

The Tukituki River has a number of tributaries that are excellent fisheries and well worth exploring. They are prime trout spawning waters attracting large mature fish during autumn and winter. Many of these fish stay on into the spring until low flows force them back into the main river. Some tributaries are sources of cold water during hot summers and attract a large number of trout. The Waipawa River is the largest tributary and provides 50km of productive water. It is a smaller version of the Tukituki with a similar range of fishing opportunities. The Mangaonuku Stream runs into the river just above Waipawa. This medium sized stream is easy to fish and holds good trout especially early and late in the summer. The Tukipo River joins the Tukituki above the Waipukurau township. Easily waded, this river is also best fished early or late in the summer. The Makaretu, Mangataura, Makaroro, Maharakeke, Tangarewai, Kahahakuri, Mangatewai and Papanui Streams are all well worth exploring.

Refer to topographical maps NZMS 260 V21, 22 & U 21, 22.

Photograph by **Brad Parkes**

Regulations

The limit bag for both the Waipawa and Tukituki (including tributaries) is two trout (brown or rainbow) per person per day.

Both the Tukituki and Waipawa downstream of the SH50 road bridges, excluding tributaries, are open to fishing all year. The upper reaches of the Tukituki and Waipawa (above SH50) and all tributaries are open from 1 October to 30 April.

Regulations may change, and anglers should read the sports fishing guide for the current regulations.

Hawke's Bay East Coast Conservancy Recreation Opportunities Review Submissions Analysis and Decision - *Department of Conservation (2004)*

Executive Summary:
On the whole the quality of information submitted was very good. Aside from comments on specific proposals, submitters raised background concerns to try and inform the review process on key issues such as:

- Limited road access in the Ruahine;
- Disabled access (Aniwaniwa Visitor Centre glaring)
- Tourism/recreation perceptions on how DOC is chasing Green $$$ and tourists at the expense New Zealanders;
- The preference for small intimate huts in the backcountry;
- The safety role of huts and bivvies;
- Road end huts for families and the less able;
- A need for updated visitor information as a safety consequence of this process;

- Working closely with other providers e.g. Territorial Authorities, Iwi.

Wellington East Coast Conservation Management Strategy Review
http://www.doc.govt.nz/getting-involved/consultations/current/wellington-hawkes-bay-cms-consultation/get-involved/

About to begin.

3. Other Texts

Central Plains Water

http://rivers.org.nz/conservation

The Canterbury Central Plains Water plans to extract up to 40cu from both the Waimakariri and Rakaia Rivers in order to irrigate 60,000ha of farmland. A 12km^2 storage lake will be created. The consents are for 35 years. The Assessment of Environmental Effects (Kowai intake) (PDF, 4.1Mb) makes little mention of kayaking, saying only Reducing the mainstream riffle depth is possibly of greater concern to activities that require longer lengths of river, such as the jet boaters and canoeists/kayakers, who require a minimum water depth of 0.2 and 0.1 metres respectively. The effect of the reduced downstream quantity of water is assessed as having a low potential to affect both instream and land-based recreation. (6.4.7, p6-9). BTW, 0.1m = 10cm!

Mokihinui HEPS Recreation and Tourism Assessment Greenaway and Associates

http://www.wcrc.govt.nz/mokihinui/application/2.17%20Recreation%20and%20Tourism%20Assessment%20of%20Effects.pdf

This report assesses the impact recreation and tourism activities of a proposed hydro-electric power dam on the Mokihnui River.

National Significance: Potential Water Bodies of National Importance for Recreation MfE 2004
http://www.mfe.govt.nz/publications/water/national-importance-rec-dec04/national-importance-rec-dec04.pdf

This project is part of the Water Bodies of National Importance project, which is part of the Government's Water Programme of Action. This report presents a list of 105 potential freshwater bodies of national importance for recreation, including lakes, rivers and wetlands. The study includes all forms of recreation in and around whole or parts of freshwater lakes, rivers and wetlands, where freshwater is important for recreational activity.

The recreational use of freshwater
The value of freshwater for recreation depends on the needs of various recreational activities. These range from low-cost, low-energy, low-skill-required, convenient activities that do not require specific water qualities (e.g. picnicking or walking beside a lake), to activities that are relatively higher cost, require a high level of technical skill and equipment, and are more expensive and time demanding (e.g. white-water kayaking). The latter activities often require more specific water body conditions, such as high water quality, rapids, gear set-up areas, or good-sized fish.

This project aimed to gather information from the full range of different freshwater recreational activities. The water bodies listed in Table 1 are from a range of information sources, intended to cover most types of freshwater recreation in New Zealand.

As a result, we have identified two predominant types of water bodies of national importance for recreation:

- those that are easily accessed, close to population centres, and consequently highly used
- those that are relatively isolated from population centres, difficult to access and used by few people, but which provide an exceptional recreation experience for specific forms of recreation.

These differences exist both between general types of recreation (identified through the phone survey (BRC, 2004b) and for specific forms of recreation (identified through members of recreational associations in the phone survey). For example, some people fish for relaxation at the most convenient water body, while others seek out a unique experience at remote and technically difficult locations.

These differences in the levels of expectation and appreciation of water bodies make it very problematic to produce a combined, ranked list of water bodies that reflects comparable value for all forms of recreation. A water body may be especially important for recreation for a number of reasons, but the main reasons appear to be location and type of water body.

- *Location* − water bodies located close to population centres are more highly used (e.g. Taupo) than water bodies that are relatively isolated from population centres. However, although locations that are difficult to access may only be used by a few people, they may provide an exceptional recreation experience for specific forms of recreation (e.g. Mokau River).
- *Type of water body* − a water body also has value for the specific type of recreation it provides, including:
  - unique water body conditions (e.g. white-water kayaking can only be done on certain rivers)
  - specific in-stream water qualities (e.g. salmon fishing can only be done at specific locations).

Water bodies identified through the phone and internet surveys have been ranked. Rankings are based on level of use rather than any perceptions our respondents had on their national importance. We were unable to rank water bodies identified within the full list (Appendix 1).

Table 1: Potential water bodies of national importance for recreation

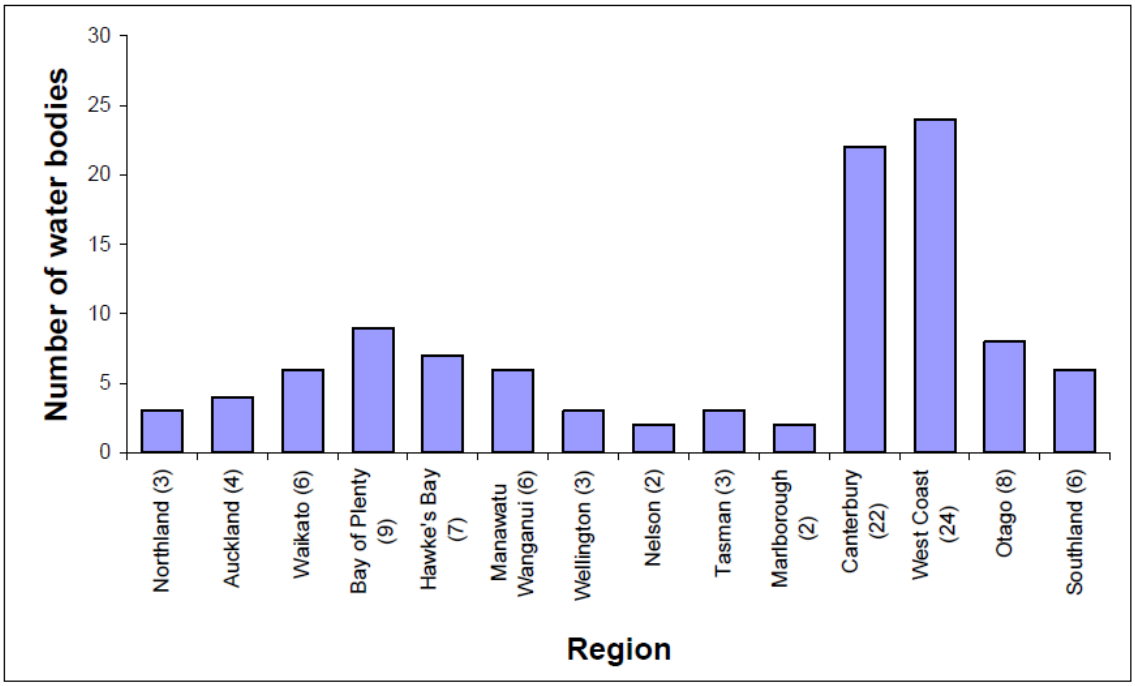
Water Body	**Region**
Kai Iwi Lakes	Northland
Kaimaumau block	Northland
Hikurangi Swamp	Northland
Pupuke Lake	Auckland
Mangaparo / Clarkes Swamp	Auckland
Mangatawhiri Swamp	Auckland
Whangamarino Swamp	Auckland
Taupo Lake	Waikato
Tongariro River	Waikato
Waikato River	Waikato
Karapiro Lake	Waikato
Tauranga/Taupo River	Waikato
Mokau River	Waikato

Motu River	Bay of Plenty
Rotorua Lake	Bay of Plenty
Blue Lake	Bay of Plenty
Rotoiti Lake	Bay of Plenty
Tarawera Lake	Bay of Plenty
Green Lake	Bay of Plenty
Rotoma Lake	Bay of Plenty
Ngongotaha Stream	Bay of Plenty
Aniwhenua Lake	Bay of Plenty
Mohaka River	**Hawke's Bay**
Waikaremoana Lake	**Hawke's Bay**
Ngaruroro River	**Hawke's Bay**
Pekapeka Swamp	**Hawke's Bay**
Tukituki River	**Hawke's Bay**
Wairoa River	**Hawke's Bay**
Ahuriri Estuary / Westshore lagoons	**Hawke's Bay**
Rangatikei River	Wanganui
Whanganui River	Wanganui
Manawatu River	Wanganui
Otaki River	Manawatu−Wanganui
Manganui o te Au River	Manawatu−Wanganui
Dune Lakes	Manawatu−Wanganui
Hutt River	Wellington
Kahangatera and Kohangapiripiri lakes and wetlands	Wellington
Wairarapa Lake	Wellington
Vernon lagoons	Marlborough
Wairau River	Marlborough
Delaware inlet	Nelson
Whanganui Inlet	Nelson
Nelson Lakes	Tasman
Motueka River	Tasman
Aorere River	Tasman
Tekapo Lake	Canterbury
Waimakariri River	Canterbury
Coleridge Lake	Canterbury
Avon River	Canterbury
Rakaia River	Canterbury
Rangitata River	Canterbury
Hurunui River	Canterbury
Clarence River	Canterbury
Benmore Lake	Canterbury
Waitaki River	Canterbury
Ellesmere Lake and wetlands	Canterbury
Ahuriri River	Canterbury
Opihi River	Canterbury
Hurunui River	Canterbury
Aparima River	Canterbury
George Lake and Henderson extension	Canterbury
Oreti River	Canterbury
Pourakino River	Canterbury
Wolds Swamp	Canterbury
Aviemore Lake	Canterbury
Waiau River	Canterbury

Hororata River	Canterbury
Brunner Lake	West Coast
Buller River	West Coast
Karamea River	West Coast
Landsborough River	West Coast
Perth River	West Coast
Hokitika River	West Coast
Arahura River	West Coast
Grey River	West Coast
Awarua River and Waiuna Lagoon Big Bay	West Coast
Birchfield Swamp	West Coast
Hermitage Swamp	West Coast
Okarito Lagoon	West Coast
Okura/Turnbull/ Hapuku Lagoon	West Coast
Tawharekiri Lakes complex Waita mouth	West Coast

Figure 1 shows the regional distribution of water bodies of national importance for recreation. Thirty-eight potential water bodies of national importance for recreational value were identified in the North Island and 67 in the South Island. By region, the most water bodies were identified in Canterbury (22) and the West Coast (24).

Figure 1: Regional distribution of water bodies identified in Table 1 as potentially nationally important for recreation

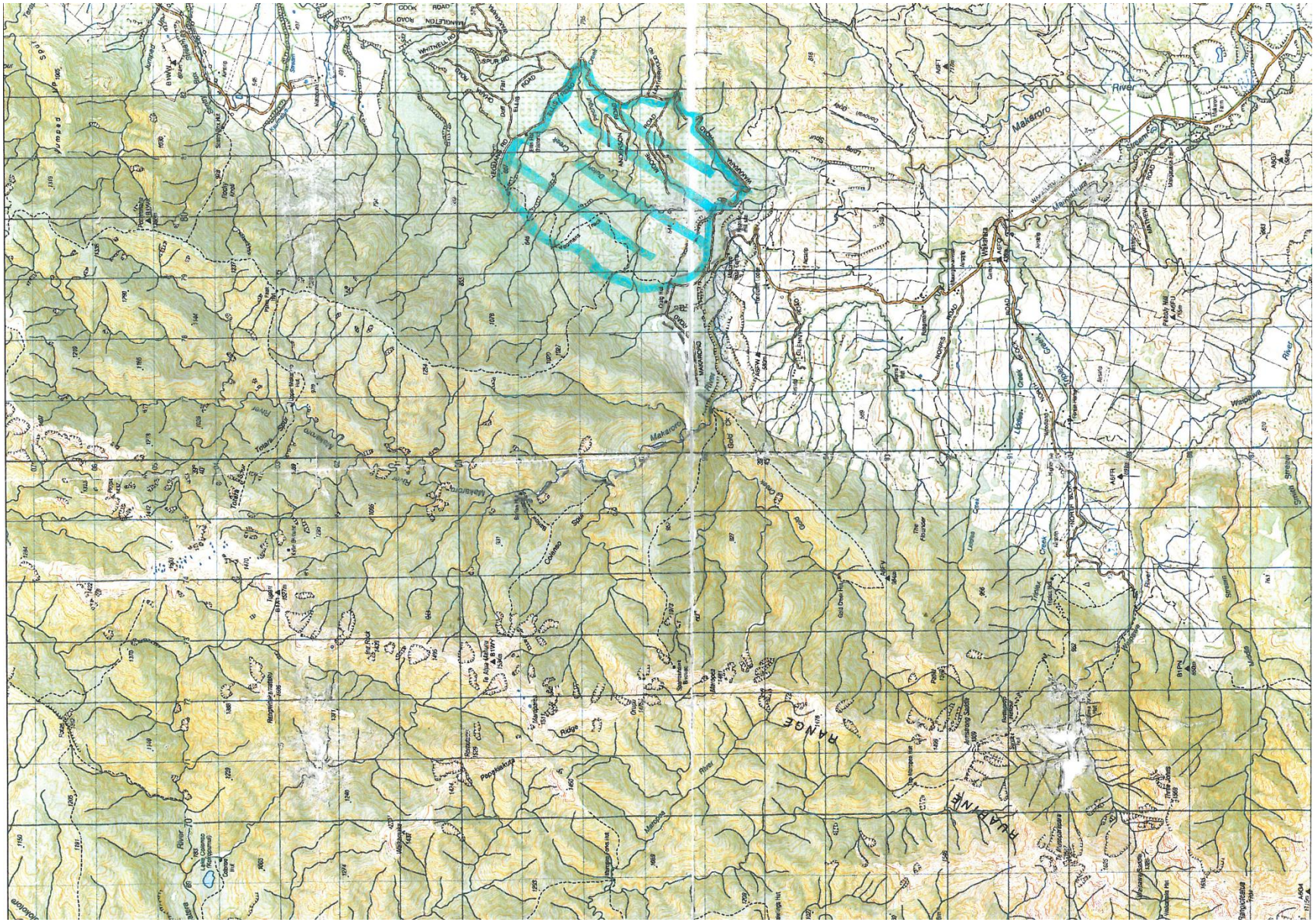


Trout Angling In New Zealand Rivers Tierney & Jowett (100 Rivers Survey)

NOTE: The applicable section of the summary table contained in this Survey, is shown below

Water body	Region	User numbers phone survey	Rank: user numbers phone survey	User numbers internet	Rank: user numbers internet	Activities ranked phone survey	Activities ranked internet survey	Other existing information
Mohaka River	Hawke's Bay			22	5		Canoeing or kayaking 12 Fishing 3 Jet boating 2 Rafting 2 Tramping 6 Other 3	Water conservation order (2004)
Waikaremoana Lake	Hawke's Bay	34	6	30	3	Canoeing or kayaking 11 Fishing 8 General sightseeing 4 Hunting 1 Swimming 9 Tramping 2 Walking 11 Water skiing, wake boarding 6 Waka ama paddling 1 Jet skiing 1 Picnicking 6	Canoeing or kayaking 12 Fishing 17 General sightseeing 1 Hunting 1 Swimming 5 Tramping 1 Walking 1 Water skiing, wake boarding 2 Yachting 4 Other 3	Angling 1994 (15), Angling 2002 (16)
Ngaruroro River	Hawke's Bay			11	23		Canoeing or kayaking 15 Fishing 11 Jet boating 2 Tramping 14 Water skiing, wake boarding 2	Whitebaiting (100)
Pekapeka Swamp	Hawke's Bay							Wetland of national importance to Fisheries
Tukituki River	Hawke's Bay							Whitebaiting (100), Angling 1994 (21), Angling 2002 (21)
Wairoa River	Hawke's Bay							Whitebaiting (100)
Ahuriri Estuary / Westshore lagoons	Hawke's Bay							Wetland of national importance to Fisheries
Rangatikei River	Manawatu–			22	5		Canoeing and kayaking 10	Angling 2002 (25)

Appendix 3: Map of Pan Pac Forest Products Ltd Land



Appendix 3: Indicative Map of Pan Pac Forest Products Ltd Land (as agreed with Pan Pac through consultation)


OPUS