greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

If calling please ask for: Democratic Services

4 May 2018

Environment Committee

Order Paper for the meeting of the Environment Committee to be held in the Council Chamber, Greater Wellington Regional Council, Level 2, 15 Walter Street, Te Aro, Wellington on:

Thursday, 10 May 2018 at 9.30am

Membership

Cr Kedgley (Chair)
Cr Brash (Deputy)

Cr Blakeley
Cr Gaylor
Cr Laidlaw
Cr McKinnon
Cr Ponter
Cr Swain

Cr Donaldson
Cr Laban
Cr Lamason
Cr Ogden
Cr Staples

Peter Gawith

Ihaia Puketapu

Recommendations in reports are not to be construed as Council policy until adopted by Council

Environment Committee

Order Paper for meeting to be held on Thursday, 10 May 2018 in the Council Chamber, Greater Wellington Regional Council, Level 2, 15 Walter Street, Te Aro, Wellington at 9.30am

Public Business

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Please note that these minutes remain unconfirmed until the meeting of the Environment Committee on 10 May 2018.

Report 18.95
22/03/2018
File: CCAB-10-487

Minutes of the Environment Committee meeting held on Thursday, 22 March 2018 in the Council Chamber, Greater Wellington Regional Council, Level 2, 15 Walter Street, Te Aro, Wellington at 09:33am.

Present

Councillors Kedgley (Chair), Blakeley, Brash (Deputy Chair), Donaldson, Gaylor, Laban, Laidlaw, Lamason, Ogden (from 10:02am), Ponter, and Staples, and Peter Gawith.

Public Business

1 **Apologies**

Moved *(Cr Blakeley/Cr Brash)*

That the Committee accepts the apologies for absence from Councillors McKinnon and Swain, and Ihaia Puketapu.

That the Committee accepts the apology for lateness from Councillor Ogden.

The motion was **CARRIED**.

2 **Declarations of conflict of interest**

There were no declarations of conflict of interest.

3 **Public Participation**

There was no public participation.

4 **Confirmation of the public minutes of 15 February 2018**

Moved *(Cr Kedgley/Cr Donaldson)*

That the Committee confirms the public minutes of the meeting of 15 February 2018, Report 18.30.

The motion was **CARRIED.**

5 **Action items from previous meetings**

Report 18.91 File ref: CCAB-10-479

Moved *(Cr Kedgley/Cr Blakeley)*

That the Committee:

1. *Receives the report.*

2. *Notes the content of the report.*

The motion was **CARRIED.**

6 **Havelock North Inquiry: GWRC's role in responding to Inquiry findings**

Councillor Ogden arrived during consideration of item 6.

Report 18.63 File ref: CCAB-10-470

Moved *(Cr Lamason/Cr Brash)*

That the Committee:

1. *Receives the report.*

2. *Approves the content of the report.*

3. *Requests officers to arrange a workshop inviting both Wellington Water Limited and Regional Public Health to discuss their respective responses to the broader set of Inquiry recommendations. The workshop could also incorporate an update on the 'Waiwhetu Aquifer contamination' workstream.*

4. *Requests officers to work proactively with territorial authorities, Wellington Water Limited and Regional Public Health to finalise the Memorandum of Understanding clarifying arrangements and responsibilities with respect to providing safe public drinking water supply in Wellington Region.*

Moved as an amendment (as an additional recommendation)

(Cr Blakeley/Cr Donaldson)

5. *Requests officers to progress implementation of the actions arising out of the Inquiry.*

The amendment was put to the vote and was **CARRIED**, and became part of the substantive motion.

The substantive motion was put to the vote:

1. *Receives the report.*

2. *Approves the content of the report.*

3. *Requests officers to arrange a workshop inviting both Wellington Water Limited and Regional Public Health to discuss their respective responses to the broader set of Inquiry recommendations. The workshop could also incorporate an update on the 'Waiwhetu Aquifer contamination' workstream.*

4. *Requests officers to work proactively with territorial authorities, Wellington Water Limited and Regional Public Health to finalise the Memorandum of Understanding clarifying arrangements and responsibilities with respect to providing safe public drinking water supply in Wellington Region.*

5. *Requests officers to progress implementation of the actions arising out of the Inquiry.*

The substantive motion was **CARRIED.**

7 **Update on Wellington Harbour and Hutt Valley Whaitua engagement and communications**

Report 18.64 File ref: CCAB-10-471

Moved *(Cr Lamason/Cr Blakeley)*

That the Committee:

1. *Receives the report.*

2. *Notes the content of the report.*

The motion was **CARRIED.**

8 Te Awarua-o-Porirua Harbour and Catchment Programme update

Report 18.69 File ref: CCAB-10-473

Moved *(Cr Donaldson/Cr Brash)*

That the Committee:

1. *Receives the report.*

2. *Notes the contents of the report.*

3. *Agrees with the current collaborative approach with a view to accelerating this once the outcomes of the Whaitua Committee are known.*

4. *Requests officers to accelerate work with Wellington Water on wastewater and stormwater issues.*

The motion was **CARRIED.**

The meeting adjorned at 10:50am and reconvened at 11:14am.

9. Wellington Region Climate Change Working Group - Terms of Reference

Report 18.80 File ref: CCAB-10-477

Moved *(Cr Blakeley /Cr Lamason)*

That the Committee:

1. *Receives the report.*
2. *Notes the content of the report.*
3. *Endorses the draft Terms of Reference for the Wellington Region Climate Change Working Group as set out in Attachment 1 to this report.*
4. *Recommends to Council that it adopt the draft Terms of Reference for the Wellington Region Climate Change Working Group.*

The motion was **CARRIED.**

10. General Managers' report to the Environment Committee meeting on 22 March 2018

Report 18.68 File ref: CCAB-10-474

Moved *(Cr Donaldson/Cr Lamason)*

That the Committee:

1. *Receives the report.*
2. *Notes the content of the report.*

The motion was **CARRIED.**

The meeting closed at 12:15pm.

Cr S Kedgley
(Chair)

Date:

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Te Pane Matua Taiao

Report	**18.167**
Date	30 April 2018
File	CCAB-10-491
Committee	**Environment Committee**
Author	**Nigel Corry, General Manager, Environment Management** **Wayne O'Donnell, General Manager, Catchment Management** **Luke Troy, General Manager, Strategy**

Action items from previous Environment Committee meetings

Attachment 1 lists items raised at Environment Committee meetings that require actions or follow-ups from officers. All action items include an outline of current status and a brief comment. Once the items have been completed and reported to the Committee they will be removed from the list.

No decision is being sought in this report. This report is for the Committee's information only.

Recommendations

That the Committee:

1. ***Receives** the report.*

2. ***Notes** the content of the report.*

Report prepared by:	Report prepared by:	Report prepared by:
Nigel Corry General Manager. Environment Management	**Wayne O'Donnell** General Manager, Catchment Management	**Luke Troy** General Manager, Strategy

Attachment 1: Action items from previous Environment Committee meetings

Attachment 1 to Report 18.167

Action points from previous Environment Committee meetings

Meeting date	Action point	Status and comment
6 December 2017	**Noted** *Officers to change the way flood standards are expressed in reports from "1 in 100 year flood standard" to percentages instead.*	**Status**: *Completed* **Comments**:
1 November 2017	**Noted** *Officers to organise a further fieldtrip to Transmission Gully for Councillors.*	**Status:** *Completed* **Comments:** Officers discussing with NZTA and JV with a view to having a field trip in early 2018. A tentative date of the morning of 4 April has been proposed.

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Report	**2018.53**
Date	10 May 2018
File	CCAB-10-475
Committee	**Environment**
Author	**Fiona Colquhoun, Parks Planner**

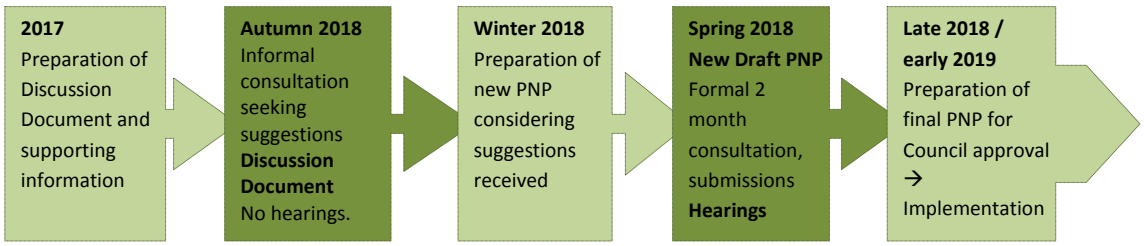
Parks Network Plan review consultation

1. Purpose

To seek approval for an initial period of consultation for the Parks Network Plan review.

2. Background

In October 2017 the Environment Committee approved a proposed process and timeline for reviewing the Parks Network Plan (PNP) which includes two periods of public consultation summarised as:



Reserves Act process

A review of the Parks Network Plan is underway to meet the Reserves Act 1977 requirement for administering bodies of reserves to keep management plans under continuous review, adapting to changing circumstances and increased knowledge (Section 41(4)).

This first round of public consultation is the initial part of the Reserves Act process for reviewing management plans. The requirement at this stage is simply for the issuing of a public notice identifying our intention to review the management plan and an invitation for the public to provide suggestions (Section 41 (5)).

We have prepared consultation material which is in addition to the Reserves Act (s41) requirements. Hearings will not be held. However all public suggestions will be acknowledged and a number of meetings with stakeholders are planned to gather more information as outlined in section 1.3 below. A summary of suggestions received during this initial feedback period will be presented to the Environment Committee for information purposes.

A draft new management plan will then be prepared considering public suggestions. The draft plan will be presented to the Environment Committee for consideration and approval for public notification and consultation. At this stage the Reserves Act requires a public notice, a consultation period of at least two months, and an opportunity for submitters to attend formal hearings and present their submission.

The Parks Network Plan

The current PNP was approved by Council in 2011 and encompasses eight parks and forests:

- Akatarawa Forest
- Battle Hill Farm Forest Park
- Belmont Regional Park
- East Harbour Regional Park
- Kaitoke Regional Park
- Pakuratahi Forest
- Wainuiomata Recreation Area
- Queen Elizabeth Park

2.1 Initial consultation document and supporting information

The purpose of the detailed consultation material is to present information about a range of key issues and seek suggestions on them. Suggestions received during the first consultation period will be used to inform the preparation of a new draft management plan. There are three consultation documents, including one general overview and two detailed supporting documents:

1. **Discussion Document (Attachment 1).**
2. **External Influences on Parks (Attachment 2)**
3. **Farming in Regional Parks (Attachment 3)**

The **Discussion Document** is structured into five parts:

1. An introduction and the management context considering the Long Term Plan and Mana Whenua

2. Looking back: this section reflects on and celebrates our achievements over the life of the current plan

3. Looking ahead: this section explores a variety of key issues and opportunities in parks such as volunteers and management of the environment in parks

4. Recreation activities: this section discusses a number of key activities including the most popular activities in parks – trail uses, camping, hunting and dog walking.

5. Park specific proposals: possible future changes and improvements in particular parks are identified here.

A short summary of the discussion document will also support communication during the engagement period.

External Influences on Parks (supporting document)

This document presents a broader 'environmental scan' of the socio-economic environment which influences park management. It encompasses a summary of visitor research and feedback, a discussion about climate change and parks, and economic, social health and wellbeing influences. It provides background information to inform the planning process and provide more detail for those interested.

Farming in Regional Parks (supporting document)

Stock grazing is used to manage large open space areas of some parks. Over recent years, farming land management practices have changed with the introduction of longer term grazing licences. These changes have led to a high level of interest from the community, particularly around Queen Elizabeth Park (QEP).

This document details why Greater Wellington uses grazing to manage areas of parks and it explores a number of possible alternatives. It documents the legislation and policy that support grazing activities for park management purposes; then explores issues and opportunities about topics such as sustainable land management, water quality, pest plant and animal control, access to recreation reserves and maintaining significant landscapes. The detail of farming activities in each regional park are then explored followed by a discussion about possible alternatives for managing the land if stock grazing is discontinued. A number of farmer case studies and a summary of how other park agencies manage large open space areas where grazing is also provided.

2.2 Consultation and engagement proposed

This initial period of public consultation is intended as a listening and information gathering opportunity. We will be seeking general suggestions as well as feedback about the issues identified in our consultation material about how we should manage our regional parks into the future and what facilities and services are needed. The discussion material is presented to support dialogue on a wide range of topics.

An overall communications plan was prepared and a copy emailed to Councillors in December. Since then one to one meetings have been held with the mana whenua of the Wellington region. Parks planning will work closely with iwi throughout the plan review process.

Consultation and engagement activities proposed during this time include:

- Mana whenua engagement activities
- Information on the website including discussion document, supporting document and feedback form
- Social media posts
- Public notice
- Poster and four page summary available in park offices / noticeboards
- Direct email notification to park stakeholders and meetings as required
- Direct email notification to all relevant regional and national recreation and conservation groups
- Park drop in sessions/ park chats at key locations or in neighbouring communities
- 'Our Region' promotion for parks
- Meetings and discussions with key park stakeholders
- Meetings and discussions with TA open space and parks planners, DOC officers and others.

Differing levels of engagement are proposed for parks. For example, a higher level of engagement activities is proposed for QEP where there has been a high level of community interest in day to day park management activities.

In addition to this consultation, the annual parks satisfaction survey (telephone) is taking place between February and April 2018. Extra questions to inform management planning were added to the survey, along with an increased population sample size (+200 people) within the vicinity of QEP. The report for this survey is well timed to inform the PNP review planning process.

To be able to reach a wide range of stakeholders and members of the public we propose a six week period of consultation. This is planned to begin in mid-May.

Public hearings will not be held at this informal information gathering stage but meetings will be held with interested parties where appropriate.

At the close of consultation, submissions will be summarised and a report presented to the Environment Committee for consideration and discussion. Preparation of a new management plan will then commence.

3. Consideration of Climate Change

The discussion document and supporting document 'External Influences on Parks' explores park management issues related to climate change in detail. For example, climate change effects for park assets and resilience of facilities and services and minimisation and mitigation measures are detailed as well as climate change projections within each Whaitua. This includes Greater Wellington's interests in the Emissions Trading Scheme and the Permanent Forest Sink Initiative.

4. The decision-making process and significance

Officers have considered the significance of the matter, taking into account the Council's significance and engagement policy, and decision-making guidelines. The matter is considered to be of high significance due to the broad public interest in parks and Greater Wellington's management activities to support and enhance recreation, environment and heritage values of our parks.

A formal record outlining consideration of the decision-making process is appropriate in this instance. A summary of public submissions will be provided to the Environment Committee.

The formal notification process for the new draft Parks Network Plan is outlined in the Reserves Act (s41(6)). This applies only to the new draft Plan which will be developed after this initial period of consultation concludes.

4.1 Engagement

Engagement on this matter is proposed as outlined above and supported by a communications and engagement plan that was prepared and sent to councillors in December. A range of engagement activities will take place during the informal consultation period as detailed in section 1.3 above, and detailed in the communication plan.

5. Recommendations

That the Committee:

1. ***Receives*** *the report.*

2. ***Notes*** *the contents of the report.*

3. ***Approves*** *the proposed initial six week consultation period for the Park Network Plan review as set out in this report.*

4. ***Approves*** *the consultation documents subject to any changes identified in this meeting.*

5. ***Agrees*** *that the Environment Committee chair will review and approve any further minor design or editorial changes as part of the design process*

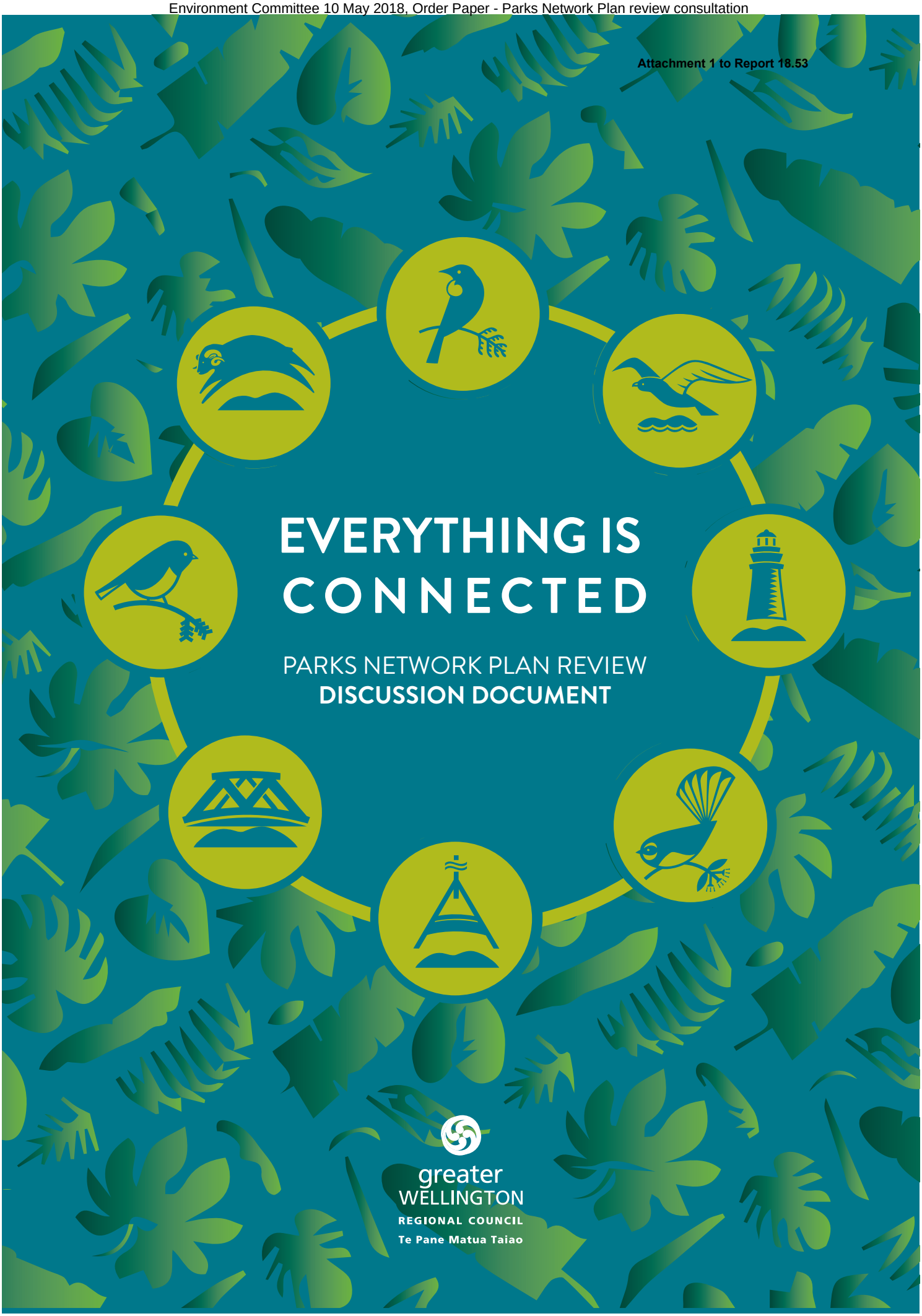
6. ***Notes*** *that a summary of submissions will be presented to the committee after the conclusion of the consultation period.*

Report prepared by:	Report approved by:	Report approved by:
Fiona Colquhoun Parks Planner, Corporate and Strategic Planning	**Nicola Shorten** Manager, Corporate and Strategic Planning	**Luke Troy** General Manager, Strategy

Report approved by:	Report approved by:
Amanda Cox Manager, Parks	**Nigel Corry** General Manager, Environment

Attachment 1: Discussion Document
Attachment 2: External Influences on Parks
Attachment 3: Farming in Regional Parks

Attachment 1 to Report 18.53



CONTENTS

EXECUTIVE SUMMARY

The eight regional parks in the Wellington region are managed under a composite management plan, the Parks Network Plan (PNP). The current plan was completed in 2011 and is now being reviewed. Our regional parks are interconnected with the community, the economy and part of natural ecosystems. 'Everything is connected' is our theme for the review of the Parks Network Plan to reflect the place of place of regional parks in the Wellington region.

This discussion document explores a variety of issues and opportunities related to parks. Some issues and opportunities are short term, such as providing up to date recreation information and more heritage interpretation, and others are very long term, such as restoring native vegetation and creating ecological corridors for wildlife to connect significant areas of bushland.

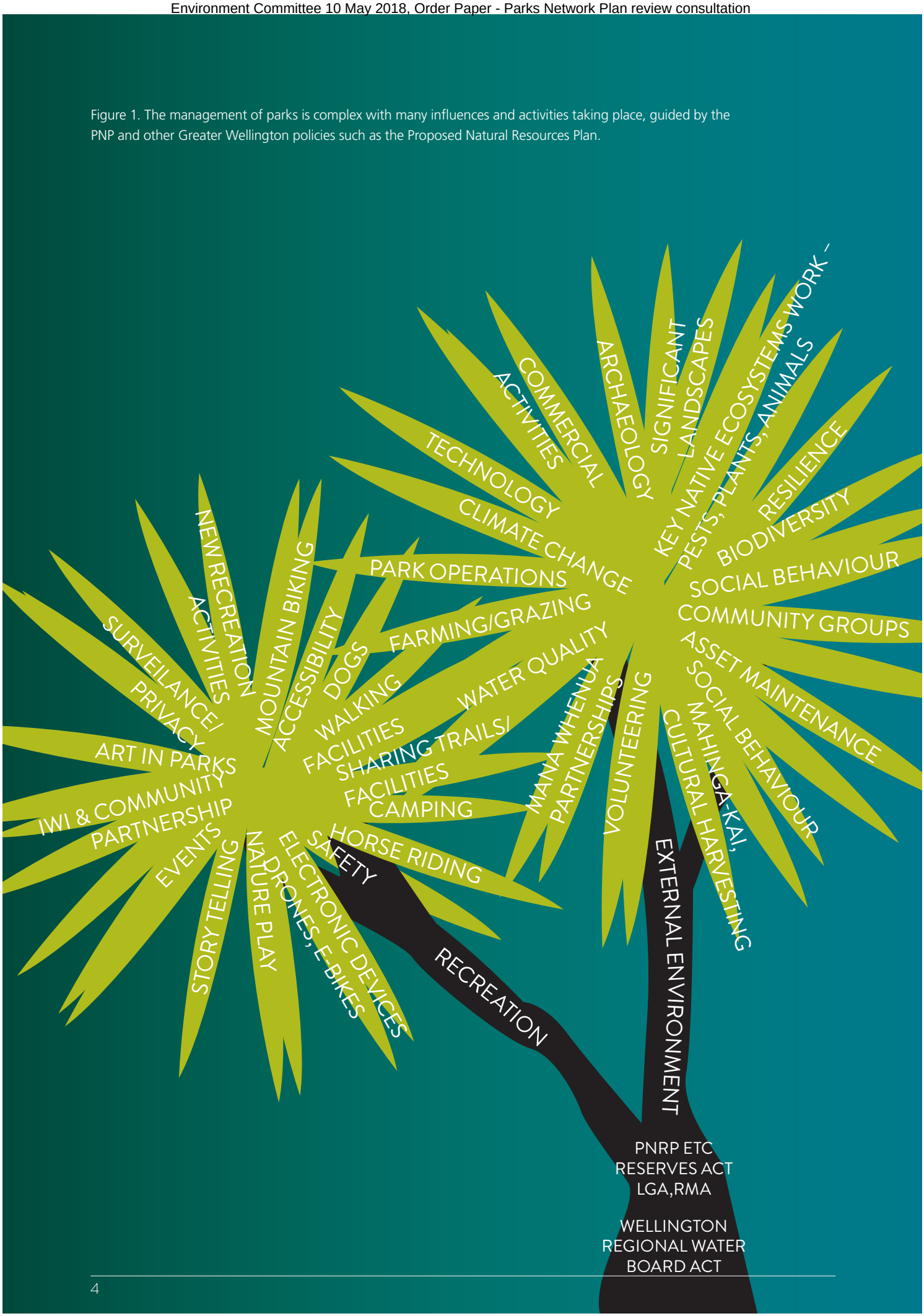
Key issues, challenges and opportunities include:

- Working more closely with our **mana whenua** partners in the management of regional parks to achieve shared goals
- Achieving shared outcomes with stakeholders and other agencies, concessionaires, friends groups and volunteers who contribute many thousands of hours of work in parks. This can include working across park boundaries as part of a landscape-scale approach to achieve biodiversity and recreation outcomes, or as part of a catchment-based approach for maintaining and improving water quality. For terrestrial and aquatic biodiversity this means working on **water quality** and enhancing **habitat links**. To ensure regional parks are well connected via recreation trails this means working with DOC, local councils and private land owners neighbouring the parks
- Checking to ensure our parks adequately provide for an ageing population with more accessible facilities and opportunities for healthy outdoor recreation activities. Connecting trails to and within parks is important, as is managing trails in a consistent way alongside other agencies so the trail experience matches user expectations
- Anticipating and managing for increasing **tourism** numbers (regional and international) which can put pressure on resources to provide necessary facilities and services
- Maintaining quality visitor experiences and providing the right **facilities** in the right places to satisfy a range of demands from more visitors and tourists. This can mean fostering friendly 'share with care' use of trails instead of duplicating them, improving our three campgrounds to better support a longer and more intensive camping season and developing more story telling in parks to reveal interesting stories which deepen understanding about our local cultural and natural history

- Maintaining **heritage assets** particularly in the context of a changing climate and more frequent severe weather events
- Having a range of options to adapt to **climate change** by ensuring that our facilities and ecosystems are more resilient and can withstand higher rainfall levels, more storm events and other effects that our changing climate is delivering, or in some cases managed withdrawal
- **Protecting significant ecosystems from threats** such as pest plants and animals and supporting native biodiversity and maintaining biosecurity programmes such as 'Key Native Ecosystems' to achieve this
- Striking a balance to maintain park indigenous biodiversity values, and responding strategically to pressures on these open spaces, such as demand for single-track mountain bike trails. Undertaking native bushland restoration activities with the support of community partners and others and resourcing support for volunteer efforts
- Increasing **commercial activities** in parks such as events, dog walking, bee keeping and concessions for selling food.

There are a range of other issues and opportunities, including those identified in the following illustration. In this discussion document we explore what we believe to be some of the key issues facing regional parks. We present this discussion as 'food for thought' and we welcome feedback which will help inform the planning process to develop a new Parks Network Plan which will guide regional park management for the next ten years.

Figure 1. The management of parks is complex with many influences and activities taking place, guided by the PNP and other Greater Wellington policies such as the Proposed Natural Resources Plan.



SECTION 1 –
REGIONAL PARKS

SECTION 1 – REGIONAL PARKS

Regional parks play a different role to the smaller parks managed by local councils and vast national parks and forests with landscapes and features of national significance managed by the Department of Conservation (DOC). Greater Wellington's regional parks are generally medium sized parks offering Wellington region residents and visitors a variety of recreation experiences in different types of landscapes. They offer bush, beaches and mountaintops to explore and form part of the scenic backdrops to Wellington, the Hutt Valley, Porirua and the Kāpiti coast. When the new Transmission Gully motorway opens it passes through both Battle Hill and Belmont parks, so these will become more prominent 'green' landmarks for the region.

Regional parks and forests are used for a variety of purposes including recreation, water supply, forestry, preservation of scenic values and farming. They are places with important natural ecosystems and rich mana whenua cultural heritage. Many of our parks contain the headwaters of water catchments with forests and streams that provide important habitat for fish, birds and other species. Like other conservation areas throughout New Zealand, the forests and native birds, animals and aquatic species in our parks face the same challenges from threatening and invasive non-native animal and plant species.

1.1 Parks Network Plan

The Parks Network Plan (PNP) is the management plan for eight regional parks and forests managed by Greater Wellington Regional Council (Greater Wellington).

Several of the regional parks are reserves or contain areas of reserve, gazetted (legalised) under the Reserves Act 1977. Greater Wellington is required, in consultation with the community, to develop management plans for those parks containing reserves and to keep these plans current. Greater Wellington has agreed that management of all the regional parks, including those that are not official "reserves" will be guided by one plan, the PNP.

Plan purpose

The PNP provides a vision for parks and outlines policies, rules and the overarching outcomes that are sought for parks via long term management. The plan highlights unique features in each park, and provides management directions relevant to them. It is a framework for addressing issues common to these areas and managing them in a comprehensive and consistent way.

Developed with input from mana whenua partners, stakeholders and the community between 2009 and 2011, the PNP represents a common understanding for managing regional parks. Since 2011 three amendments to the PNP have been undertaken to maintain its currency.

The PNP is a composite plan for managing eight regional parks. This helps ensures that policies and management directions for parks are consistent, but there is a dedicated section for each park in the PNP.

The PNP has generally guided park management well, which is evidenced by the need for only minor amendments to date. However, many of the key actions of the plan have now been delivered and there are other new Greater Wellington strategies, policies and work programmes which should now be reflected in the PNP. In addition, recreational activities change over time and external influences such as increased tourism demand, a changing climate and urban growth are also influencing Greater Wellington's day to day management of parks. Mana whenua and community needs and aspirations for parks can also change over time and are influenced by the settlement of Treaty of Waitangi historical claims with the Crown, population demographic changes and broader societal trends.

Greater Wellington needs to identify how and what changes we should make to our PNP so that it continues to provide relevant policies and directions for management of parks and their facilities and services over the coming ten years.

It should be noted that the PNP is a high level management plan. It sets out the policies and more significant proposals for facilities to guide management, but it is not intended to deliver funding. This is addressed in Greater Wellington's Long Term Plan, annual budgets and an operational plan. The plan does not remove the need for consents or authorisations required by other plans or regulatory frameworks, in particular, the Resource Management Act 1991 and the Heritage New Zealand Pouhere Taonga Act 2014.

1.2 Why regional parks are valuable

Regional parks and forests protect natural, scenic and cultural values that contribute significantly to the identity of the Wellington region, its history and people. The PNP identifies core values of regional parks. These values are assumed 'common ground' for the purposes of consultation and a starting point for development of a new parks network plan. The PNP identifies the following values:

Parks conserve nature, cultural and scenic values

Parks conserve important natural areas of biodiversity and a variety of ecosystems such as lowland forests, wetlands and dunes, streams and rivers which are home to a rich variety of plants and animals. They provide important green links between parks such as the Tararua and Rimutaka Forest Parks and urban areas.

Cultural features and historic sites in parks have special significance for mana whenua and represent the living history of our relationships with the land, or sense of place for residents of the Wellington region and have special significance for mana whenua. Park landscapes form part of the scenic backdrops to Wellington city, the Hutt Valley and the Kapiti Coast. For park visitors they offer a diversity of landscape types from lush bush to open farm land and views of stunning coastal scenery.

Parks provide social and economic benefits and recreational opportunities

Regional parks provide opportunities for adventures and day to day recreational enjoyment. With approximately

Greater Wellington's summer events programme encourages people to try new activities and go and have fun in parks across the region.

480 kilometres of roads and tracks for walking, running, cycling and riding there is a rich choice of places to visit. Recreation clubs using or based in parks provide for activities ranging from horse riding to four wheel drive and trail bike riding to flying model aeroplanes.

Parks also provide opportunities for local business to flourish and employ local people. Commercial activities in parks include market and music events, films and tours which attract visitors both locally and internationally. Parks are also destinations for tourism day visits and overnight stays in campgrounds. Forestry and farming are not just ways of managing large areas of land; they provide an income stream that goes back into park development.

Parks contribute to healthy lifestyles and cultural wellbeing

Parks provide opportunities to be involved in activities with others and make meaningful social and cultural connections. This can be through participation in mana whenua heritage walks, rongoa cultivation, cultural events or kaitiaki activities, friend's group activities, planting and weeding days, heritage restoration projects, recreation club activities and other social meet up opportunities.

Regional parks are increasingly important as places of respite and refuge from the pressures of busy day to day lives where you can have a 'green', ' nature bathing' break from screen time and technology and be active or simply enjoy being still and amongst nature. The benefits of parks for supporting and enhancing physical and mental health and wellbeing are well documented, but apart from places for fun, health and fitness, parks support social connections and learning opportunities.

1.3 Purpose of discussion document

The purpose of this document is to **explore issues and opportunities** facing regional parks and forests, share research findings and possible proposals and new policy directions for inclusion in a new parks network plan – and to **seek feedback** on all of these. Initial feedback will help Greater Wellington to develop a new draft PNP which will be made available for public review later in 2018.

There are eight parks in this overarching management plan:

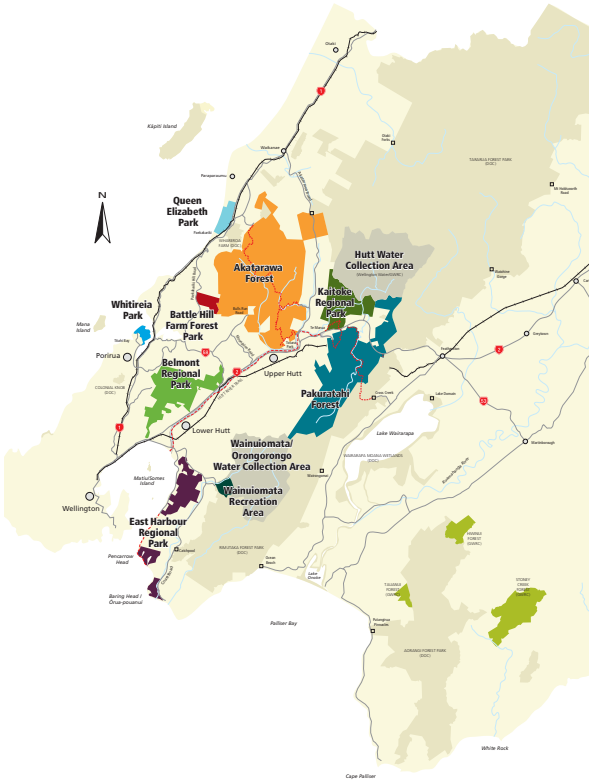
- Akatarawa Forest
- Battle Hill Farm Forest Park
- Belmont Regional Park
- Kaitoke Regional Park
- Pakuratahi Forest
- East Harbour Regional Park
- Queen Elizabeth Park
- Wainuiomata Recreation Area.

These parks are referred to as 'parks', the 'park network' or 'regional parks' in this document.

The PNP does not include:

- Whitireia Park
- Hutt and Wainuiomata/ Orongorongo Water Collection areas
- Hutt River Trail
- Wairarapa Moana.

These parks and areas have separate management plans or guiding documents.



Map 1. Whitireia Park has its own management plan and is managed by a Park Board with representatives from Ngāti Toa Rangatira and Greater Wellington. All other regional parks are included in the PNP.

1.4 Greater Wellington Long Term Plan Directions

Greater Wellington's Ten Year Plan outlines 'community outcomes *'that Greater Wellington aims to achieve to 'meet the current and future needs of mana whenua and communities for good-quality local infrastructure, local public services, and performance of regulatory functions' and 'improve residents' quality of life by contributing to the achievement of these outcomes'* which are:

Strong Economy - a thriving and diverse economy supported by high quality infrastructure that retains and grows businesses and employment.

Connected Community - people are able to move around the region efficiently and communications networks are effective and accessible.

Resilient Community - a regional community that plans for the future, adapts to climate change and is prepared for emergencies.

Healthy Environment - an environment with clean air, fresh water, healthy soils and diverse ecosystems that supports community needs.

Engaged Community- people participate in shaping the region's future, take pride in the region, value the region's urban and rural landscapes, and enjoy the region's amenities.

Greater Wellington's Long Term Plan sets out funding available for all of Greater Wellingtons operations including parks. In the 2015-2022 Ten Year Plan, parks represent 4% of the total annual Greater Wellington budget. A lot is achieved with this budget. The regional park network is managed to provide services and facilities for visitors including:

- Maintaining a network of essential park infrastructure such as roading, tracks, structures, toilets, water-supplies, fencing and signs
- Support for volunteer works, and many other conservation and recreation activities.
- Parks planning services
- Park ranger services
- Annual events programme

Parks activities are funded 90% from general rates and 10% user charges from organised events, leases, licenses and other fees such as camping. Parks are also supported by funding allocated to biodiversity, biosecurity and environmental science activities.

The Long Term Plan provides the funding that enables implementation of PNP policy directions and day management of parks. To ensure they remain relevant to the changing needs of our regional community, the parks are being made *"more accessible to people of varying age, ability and experience".*

Apart from the Long Term Plan, parks are supported by revenue from a number of external sources. This includes fees received from concessions, licence and lease agreements for commercial and non-commercial activities that take place in parks. Private investment and 'community raised capital' funds are also received for works such as habitat restoration activities, and restoration of historic features such as the Baring Head lighthouse complex buildings. Other significant funds for specific infrastructure works in parks have been associated with Transmission Gully and other private land development projects to compensate for the impact of these projects on the management of these Parks.

In **2018 a new Ten Year Plan is being developed** and a draft was available for public review and comment in April. Whilst overall based funding is not proposed to increase in this Ten Year Plan there are number of significant proposals for parks. These are:

1. Upgraded swing bridge at Kaitoke RP near the camping area to increase capacity and accessibility
2. New top Terrace camping facilities (BBQ/ toilet) Kaitoke RP
3. A new toilet at Tunnel Gully, Pakuratahi Forest
4. A new loop track connection from Wainuiomata Recreation Area's historic lower dam to the pa harakeke and Sledge track
5. Conservation work on historic bridges in Pakuratahi Forest
6. Conservation management plan for the Belmont RP WW2 munitions bunkers

This bridge over the Hutt River at Kaitoke Regional Park is heavily used by campers and other park visitors but it is not easily accessible or have sufficient capacity to comfortably accommodate the number of park visitors the park receives. A new bridge is proposed in Greater Wellington's Long Term Plan capital work proposals.

Section 5 of this discussion document identifies a range of park specific proposals. If you have feedback about these proposals please let us know.

1.5 Mana whenua, Māori residents and parks

The dynamic history and changing population of Māori residents of the region still influences relationships today and has an important bearing on land and park management issues.

Greater Wellington is home to:

- Mana whenua who have specific recognised kaitiaki responsibilities over their ancestral lands and shared responsibilities in overlapping areas with their mana whenua neighbours.
- Taura here/mātāwaka (non-mana whenua) Māri residents who settled in Wellington. teara.govt.nz/en/apprenticeships-and-trade-training).

Greater Wellington is committed to working with Māori to build resilient, connected and prosperous whānau, hapū and iwi and enhance our natural assets.

To achieve this, we have partnership arrangements with six mana whenua iwi authorities. These relationships were formalised through a Charter of Understanding 1993 and a Memorandum of Partnership in 2000 which was revised in 2013. Three of the six partners have settled their Treaty of Waitangi historical claims with the Crown and are advancing their post settlement development aspirations which includes working closely with Greater Wellington on park management responsibilities. In park management Treaty Settlements have defined particular management relationships, but not all of the iwi of the region have completed the Treaty Settlement process.

Greater Wellington works alongside mana whenua in day to day park management and regularly consults in relation to:

- Decisions about significant new facilities or services in parks
- Maintaining an accidental discovery protocol for earth works
- Proposals that require consent
- Native vegetation restoration works
- Deciding names for new facilities or services
- Environmental monitoring and protection works
- Ceremonial occasions and many other ways
- Māori business concessionaires

Greater Wellington's iwi partners in the region are:

Mana whenua	Represented by	Primary interests	Regional Park interests
Ngāti Toa Rangatira	Te Rūnanga o Toa Rangātira Incorporated	Porirua, Wellington, Hutt Valley	Battle Hill Farm Forest Park, Belmont RP, Akatarawa Forest, Queen Elizabeth Park, Kaitoke RP, Pakuratahi FP
Taranaki Whānui ki te Upoko o te Ika a Maui	Port Nicholson Block Settlement Trust (PNBST)	Wellington and Hutt Valley	Belmont RP, Kaitoke RP, Pakuratahi Forest, East Harbour RP, Akatarawa Forest, Wainuiomata Recreation Area
Te Ātiawa ki Whakarongotai	Ati Awa ki Whakarongotai Charitable Trust	Waikanae	Queen Elizabeth Park
Ngāti Raukawa ki te Tonga	Ngā Hapū ō Ōtaki	Ōtaki	Interest in region wide kaitiaki matters
Rangitāne o Wairarapa	Rangitāne o Wairarapa Incorporated	Wairarapa	General interest in Kaitoke RP, Pakuratahi Forest
Ngāti Kahungunu ki Wairarapa	Ngāti Kahungunu ki, Wairarapa Trust	Wairarapa	General interest in Kaitoke RP, Pakuratahi Forest

We are also committed to consulting with taura here/ mātāwaka groups as part of the review of the PNP.

Co-management of Parangarahu Lakes

Greater Wellington and Port Nicholson Block Settlement Trust (PNBST) jointly manage the Parangarahu Lakes Area through a 'Roopu Tiaki' or guardianship group set up in 2012. The Roopu Tiaki developed a long-term vision and co-management plan for the Parangarahu Lakes area of East Harbour Regional Park. The Co-Management Plan and PNP amendment were adopted by Greater Wellington and PNBST in February 2015.

The co-management plan outlines the approach to be taken by PNBST and Greater Wellington to fulfil their kaitiaki and legal responsibilities. It is a guiding document setting the vision, guiding principles, historical context, management objectives and priority actions for management of the Parangarahu Lakes Area.

Key activities in the plan are:

- Restoration of native fish habitat and fish migration passages from the lakes to the sea
- Native plantings, predator control and terrestrial and aquatic weed control, and monitoring with the addition of Māori cultural health indicators
- Protection of significant cultural heritage, including recording oral histories and other story telling
- Enabling Taranaki Whānui iwi members to exercise their kaitiaki responsibilities
- Advocating for closing the current gap in the Remutaka Cycle Trail

Collaborative management works include:

- Guided iwi history tour of the lakes and presentations on cultural and ecological values of the lakes
- Kaumātua trips to the lakes
- Iwi planting days
- Annual Rahui for nesting dotterels

Greater Wellington Māori Partnership Framework/ Te Kawenga Rangapu Māori

Greater Wellington's Māori Partnership Framework 2016-2026 proposes new ways of working with Māori to achieve mutually beneficial outcomes that are aligned to the aspirations of mana whenua for community benefit. The Framework aims to deliver prosperous Māori with effective collaborative networks connected to an environment in optimum health. One of the Strategic Pou (strategic drivers) of the Framework is *Active Māori participation in decision making.* Three of the ways that Greater Wellington aims to give expression to this commitment are particularly relevant to regional parks. These are:

1. Review and strengthen existing Māori participation processes to enable effective strategic decision making (eg Ara Tahi and mana whenua authorities have received presentations on the PNP)

2. Explore ongoing co-governance opportunities with Māori to enable improved social, cultural and environmental outcomes (eg, Parangarahu Lakes co-management)

3. Partner proactively with Māori to develop new partnership and co-management arrangements of natural and physical resources.

PNP directions

Over the period since the PNP was developed Greater Wellington has worked more closely with mana whenua as significant partners in the management of land across the region including parks. The PNP needs to be updated to better reflect this work in partnership approach or mahitahi approach we now have with mana whenua. Greater Wellington is working with mana whenua throughout the PNP review process to develop new directions for the management of parks and areas of interest. This is a commitment to active engagement, good faith and commonality of purpose in sustainable land management.

The current PNP identifies two key outcomes relating to cultural heritage:

- *Significant heritage features and associated histories, stories and knowledge are identified and protected*
- *Cultural heritage in Greater Wellington parks is enhanced through cultural awareness and appreciation.*

Policies in the PNP relating to mana whenua and cultural heritage remain relevant but may be updated and enhanced. These are:

- **Identifying and protecting historic and cultural features,** taking their significance into account and adhering to established protocols and the Heritage New Zealand Pouhere Taonga Act 2014
- **Managing sites of significance** to tangata whenua through engaging with and taking into account protocols relating to cultural artefacts or human remains and disclosure and non-disclosure of sites and information
- Encouraging greater **awareness** of the range and significance of the **cultural heritage values and features** of regional parks and interpreting them to park visitors in liaison with mana whenua and others where it is agreed interpretation is appropriate.

- Supporting the **preservation** of 'information and knowledge relating to significant heritage sites and values of the parks according to national standards and tangata whenua tikanga while having regard to relevant privacy issues'
- Providing for **customary harvest** of natural materials such as harakeke/flax for weaving and mahinga kai
- **Language and naming policies**. This includes promoting awareness of Māori language and place names within parks when naming areas, tracks or features and 'giving preference to names that reflect mana whenua partners' values, natural and physical features, local history and heritage, cultural and community associations or an individual or organisation that significantly contributes to the park or facility through gifting or sponsorship or personal commitment of time and energy'. Current PNP policy requires 'the approval of Council when naming or renaming parks, forests or significant features, following appropriate consultation with tangata whenua, the public and interest groups'.

Looking ahead

Discussions with mana whenua to date have identified a range of interests, issues and opportunities for consideration in the review of the PNP. This includes:

- A desire for enhancement for regional corridors or biolinks for wildlife
- The opportunity to work with mana whenua to reveal more of the significant stories of particular parks to park visitors, for example through heritage interpretation activities and mana whenua led heritage walks
- Interests in mahinga kai and customary harvest of native plants and animals
- Ongoing input to significant decision making and cooperative projects or works
- More Te Reo Maori place and park names for parks and park facilities such as trails

- Should all regional parks have dual English and Māori place names? We would like to hear your views
- Would you like to see more stories about local mana whenua heritage in parks? If so what do you think is the best way to reveal stories? Is it face to face storytelling, interpretation panels, an app on a smart phone or a combination of these?

Dry Creek campground in Belmont RP is the closest campground to Wellington and particularly popular with overseas visitors

The replica Elvish Archway at Rivendell is a must see attraction for many Lord of the Rings fans in Kaitoke Regional Park.

SECTION 2 – LOOKING BACK – CELEBRATING THE ACHIEVEMENTS OF THE PNP

SECTION 2 – LOOKING BACK – CELEBRATING THE ACHIEVEMENTS OF THE PNP

The PNP was adopted by Council in 2011 and since then a lot has been achieved through the people and financial resources committed to parks by Council, and through the efforts of our mana whenua partners and stakeholders. **Before we move forward to the development of a new management plan for our parks we think it's important to reflect and celebrate our successes, of which there have been many.** Below are just a few of the key achievements since the PNP was developed. It is important to note that many of these achievements have taken place with the support of our mana whenua partners and stakeholders who have made significant and valuable contributions to the places the places and causes that they love – be they recreation or conservation.

Providing for fun, fitness and recreation adventures in parks

QEP cycleway/ walkway - the new Te Ara o Whareroa trail

In 2016 the Te Ara o Whareroa was completed and officially opened. The shared use trail connects Paekākāriki and Raumati South and has proved very popular with a high level of daily use by commuter cyclists including children going to school. It's also popular with walkers, runners and recreational cyclists. Mostly funded by NZTA, the surface is bitumen which makes it highly accessible for all types of wheeled devices such as mobility or small wheeled scooters.

The Te Aro o Whareroa trail connects Paekakariki and Raumati South via QEP and is a hugely popular trail for commuter and recreational cyclists, walkers and runners.

Better trails in the Korokoro Valley, Belmont Regional Park

Tracks and other structures were extensively damaged in the **Korokoro Valley** in May 2015 floods but the repair work required provided the opportunity to upgrades tracks. The entire length of the Korokoro Stream track from Cornish Street to the Belmont Trig was improved with more gentle gradients and bridges were replaced.

The historic **Woollen Mills Dam** was also damaged by the May 2015 floods. The repair project was complex and required specialist contractors to repair and reinforce it so it can better withstand future flooding. Fish passage in the form of a rope was added over the dam wall for tuna (eels) and bullies. This means that fish can access 15km of waterways upstream.

Elsewhere in the Korokoro Valley Greater Wellington worked with the Belmont Area Mountain Bike Association (BAMBA) to develop a network of shared use and **mountain bike** (MTB) trails in the former plantation forestry area near the Stratton Street park entrance. Trails range from challenging and technical descents (black category) to an easy category uphill route called "Four Degrees".

Flood damage repairs to the Korokoro Dam track provided the opportunity to improve the track and make it more resilient to future flood events.

The scenic and historic Woollen Mills dam has been repaired after damage from flooding in May 2015.

New mountain bike tracks have been developed in the upper Korokoro Valley former forestry plantation areas which are now regenerating native bush.

Upgraded tracks in East Harbour RP Northern Forest

Across the park network there have been upgrades to trails. In East Harbour Regional Park for example, the Kowhai, Mackenzie and Korohiwa/Bus Barn tracks have been upgraded. This means more gentle gradients for hill climbing, less soil erosion from water runoff and more enjoyable trail experiences for most people. The Kowhai track now offers easier access to the popular Butterfly Creek picnic area and wooden drainage structures to carry off rainfall without significantly damaging the track. Vegetation maintenance ensures that a number of spectacular harbour views are maintained, and seats have been installed for visitors to rest and enjoy the views. All the Northern Forest's trail maps have also been replaced. Counters installed on tracks to monitor visitor numbers have indicated that since these improvements have taken place, trail user numbers have increased significantly; from approximately 32,000 people in 2015 to 68,000 in 2017.

A new Regional Trails Framework

Greater Wellington with all the region's territorial authorities, WREDA and DOC worked together to develop the Regional Trails Framework, completed in 2017. This framework identifies a hierarchy of trails from 'signature' to 'regional' and 'local', and aims to deliver a fully co-ordinated approach to management and promotion of the region's approximate 2600 kilometres of tracks and trails. Within regional parks the Remutaka Cycle Trail in Pakuratahi Forest is classified as a "Signature" Trail – meaning it is a key trail destination offering high quality visitor experiences. Priority

The Remutaka Cycle Trail

The overall Remutaka Cycle Trail is 115km long with the Remutaka Rail Trail a significant part of it connecting to the Hutt River Trail and coastal tracks in the Wairarapa. The cycle trail has grown to become the fifth most popular ride in New Zealand, and is one of New Zealand's "great rides". Greater Wellington has restored heritage features such as culverts and historic tunnels and is planning many more improvements to the visitor experience.

The restored Summit station is a now popular rest stop on the Remutaka Rail Trail.

Revealing interesting stories to visitors

A snap shot of the former QEP US Marines camp

Between 1942 and 1944, during WW11, the area that is now QEP was home to over 15,000 U.S. Marines. To bring a part of this history back to life the Kāpiti U.S. Marines Trust, other community members and volunteers restored and installed a former accommodation hut at the location of what was 'Camp Russell' and is now the Marines Memorial area near the Mackays Crossing entry to QEP. You can visit the hut and look through the window to see a glimpse of life in the U.S. Marines camp during WWII.

A former US Marine hut has been restored and installed in QEP providing a hint of how the Marines lived at QEP during WW2.

Rivendell at Kaitoke RP

A part of Kaitoke RP will forever be known as Rivendell; a significant refuge and rallying place for elves in The Lord of the Rings trilogy films. Lord of the Rings enthusiasts make pilgrimages to significant filming sites throughout New Zealand and Rivendell is one of the top ten sites according to Tourism New Zealand. To support these pilgrimages, in conjunction with Wellington Movie Tours, Greater Wellington officially opened an Elvish Archway replica at Rivendell and a number of interpretation works. Tours and ranger talks at Rivendell remain popular many years after the films were released.

Tours and ranger talks at Rivendell remain popular many years after the Lord of the Rings films were released.

Preserving cultural heritage and landscapes

Redeveloping the Baring Head lighthouse cottages and complex

Baring Head is a stunning landscape and a special place in East Harbour Regional Park. Visible in the distance from much of Wellington, it has a remote feel but is only 50 minutes from downtown Wellington City. With the help of the Friends of Baring Head, the two historic light house keeper's cottages will be restored to their original condition and made available for bach style overnight stays in the park.

Left: The loo with a view faces towards Turakirae Head. The cottages will be will be available for overnight stays in future after restoration activities are completed. Right: Massey University student concept for storytelling.

A co-management plan for Parangarahu Lakes

The Parangarahu Lakes (Lake Kohangapiripri and Lake Kohangatera) are located between Pencarrow Head and part of East Harbour Regional Park. The area features the culturally significant lakes and their associated wetlands and dendroglyphs (tree carvings). Greater Wellington and Port Nicholson Block Settlement Trust (PNBST) jointly manage the Parangarahu Lakes Area through a 'Roopu Tiaki' or guardianship group established in 2012. To support this relationship a co-management plan was prepared which outlines a shared vision for management, fulfilling kaitiaki and legal responsibilities for the lakes.

Parks contribute to community health and wellbeing

Wellington Riding for the Disabled moves to Battle Hill Farm Forest Park

The Wellington Group of Riding for the Disabled (WRDA) were required to move from former hospital land at Kenepuru where they had been located for 30 years. Battle Hill with its focus on farming and equestrian activities was identified to be a good fit for the group, and in October 2016 they moved in and constructed a temporary riding arena. A long term lease has now been signed and the group will build an all-weather covered riding arena at the northern end Abbotts Field. Riding for Disabled and their clients have settled in well at Battle Hill. Visitors enjoy seeing horses in park paddocks, local residents have become volunteers, and clients and volunteers can enjoy safe riding away from vehicles (they rode beside roads at Kenepuru) in a beautiful park setting.

Preserving and improving natural heritage

Key Native Ecosystem (KNE) programme work in parks

Key Native Ecosystems are areas within parks identified as having the most significant natural heritage values. These areas are supported by a work programme to manage threats posed to them by introduced species and external factors such as a changing climate. There are KNE areas in all regional parks and forests delivering a range of works such as:

- Culling non-native animals such as deer, goats and pigs. This work reduces the threat of pest animal browsing to 'browse-sensitive' species such as broadleaf/pāpāuma (*Griselinia littoralis*) and māhoe (*Melicytus ramiflorus*). Recreational hunters also assist by culling species such as deer and pigs. Benefits from the work include an increase in the kererū population and other native bird species in parks.
- Restoration of a highly significant coastal broadleaf/podocarp forest at QEP. This site is only one of two remaining examples of this forest type on the Kāpiti Coast.
- In partnership with iwi, adjacent landowners and duck hunters, 'oxygen weed' was sprayed and its negative effects reduced in Lake Kohangatera, within East Harbour RP. Also in East Harbour, at Pencarrow Head local volunteers from the Mainland Island Restoration Operation, the Ornithological Society of New Zealand and iwi worked together to protect nesting banded dotterels from predators by annual 'rahui' in breeding season (September-February) which prohibits motorised vehicles, cyclists and walkers from entering the dotterel's breeding site.

Aquatic ecosystems – improving fish passage in streams

Battle Hill best practice fish passage

Obstacles in streams and waterways can unintentionally hinder fish movements up and downstream. This means fish have to grow and survive in much smaller areas of stream habitat. To remedy this problem at Battle Hill, three 'fish passage' structures were installed in a tributary of the Horokiri Stream; a stream which is home to several species of rare and threatened native fish. Battle Hill is a 'working farm' park with all areas open to the public, so the new fish passage structures are intended to be used to model how obstacle adaptation and fish passage can readily achieved by others such as private land holders who have streams and dams on their rural properties. Park visitors can easily see the new fish passage structures in the stream and dam area not far behind the woolshed at Battle Hill.

The weir at Battle Hill was previously a barrier to fish movement. To make it easier for fish to move upstream a rock 'ramp' was constructed and now eel and other fish can easily move between different areas of stream habitat. This fish passage example is close to the well-used main path towards the eastern forest. Information panels will be installed in future.

Sustainable land management

Better land management through long-term grazing licences and implementation of Sustainable Land Use Plans

In the past stock grazing licences have been relatively short term which has provided little incentive for farmers to invest in sustainable land use practices. To change this practice and support a shift to longer term planning, Greater Wellington tendered then issued grazing licences for a ten year term for areas of Queen Elizabeth, Belmont and Battle Hill parks. Grazing licence activities are supported by 'Sustainable Land Use Plans' (SLUPs) which identify key issues for consideration in management and the areas of park for developed or retirement from grazing. The combination of long-term licences and SLUP's has resulted in overall improvements in land management. For example:

- At QEP the entirety of the North Whareroa stream has been fenced to exclude stock and a 10 metre buffer either side of the stream has been planted with native vegetation. Rotational grazing, which maintains ground cover and reduces erosion risk and nutrient loss, is a key stock management principle.
- At Belmont RP lane fencing has been installed to provide year round access along the Old Coach Road, an area previously seasonally closed to park visitors during lambing and calving periods
- At Battle Hill the stream in the 'Airstrip block' has been fenced to exclude stock and is being progressively replanted by volunteers

In all parks, practices around fertiliser inputs have changed:

- Farm planning identifies particular areas of land where soil fertility is low and fertiliser is selectively applied to these areas. This reduces the potential for over use of fertilisers, and run off to streams and waterways as well as reducing costs for grazing licence holders
- The practice of 'zero tillage' has also been introduced. This means than when grazing licence holders renew pastures with new seed, instead of ploughing, they 'direct drill' seeds into the soil. This reduces possible topsoil loss, maintains soil structure and preserves organic matter insitu. in situ.

Across parks, other land-care activities have included stabilising erosion-prone slopes with 'pole planting' of species including willows and poplars and revegetation with native species in areas where stock are excluded. Stock grazing has been used as a management method for controlling the spread of woody weeds such as gorse. Stock grazing has also maintained the open grassy hill top landscapes of Baring Head and Belmont parks, and reduced the risk of fires as well as the spread of weeds into nearby ecologically significant areas. Fees received from grazing licences are used to improve park infrastructure such as fencing, signs and track upgrades, and to benefit park restoration activities.

Lane fencing of the Old Coach Road in Belmont Regional Park has removed the need for seasonal closures for lambing and calving along this route.

Roads of National Significance and parks

Transmission Gully Motorway and the Mackays to Peka Peka Expressway are Roads of National Significance and have resulted in changes for three parks; QEP, Belmont Regional Park and Battle Hill Farm Forest Park. Greater Wellington has worked with the New Zealand Transport Agency (NZTA) and the road builders to minimise the effects on parks from these new road projects.

The Mackays to Peka Peka Expressway (M2PP) adjacent to QEP's eastern boundary is now completed and open. However building the Expressway meant more water runoff flowing into QEP. To minimise the effects of this road runoff, water sensitive design methods have been employed such as roadside swales and within the park, sediment and weed in the Whareroa Stream has been removed to improve stream flow during high water events. These works have improved oxygen levels in the stream and reduced water temperatures which improve the habitat for freshwater invertebrates and native fish. Further works will include planting streamside to provide shade.

The Transmission Gully motorway (TG), currently under construction, passes through Belmont Regional Park and Battle Hill Farm Forest Park. Some of the land of these parks has been lost to the motorway project but the compensation for land lost has been reinvested into park improvements. Access has been maintained across

the motorway land in Battle Hill, with an underpass now in place, but in Belmont park access, east-west access is limited for the duration of works.

Greater Wellington has worked with the NZTA and the 'Joint Venture' companies constructing the motorway to minimise negative effects for both parks. In Belmont a state-of-art woolshed, fenced laneways and covered yards have been constructed to replace the original woolshed, now cut-off by the motorway on the western side of the park.

Other compensation works include native vegetation restoration works. In the Duck Creek and Cannons Creek catchment's over 200 hectares has also been retired from grazing, fenced to exclude stock and is being progressively replanted with native shrubs and trees. The motorway works (and huge earth moving machinery) can be viewed from lookouts at high point's tracks on the western side of Belmont. East-west access across the park will be restored before the motorway is completed.

The Transmission Gully motorway development through Belmont Regional Park has resulted in many changes including a new woolshed for the eastern side of the park.

New park facilities and sustainability

'Ramaroa', the entrance hub at Queen Elizabeth Park

A new entrance hub building has been constructed at MacKays Crossing in QEP. This work is part of implementing the 2012 Heritage Framework for the park. 'Ramaroa' was officially opened in December 2017 by local mana whenua. The building design is culturally sensitive; reflecting both Māori and European heritage. The architect cleverly designed two separate buildings linked via a gullwing roof and tilted walls which refer both to the traditional Māori wharenui and also the tent structures of the former WW2 U.S Marines camp. The entrance hub includes a ranger office, meeting room and public toilets and will include heritage interpretation in future.

Kaitoke is an award winning park!

Kaitoke Regional Park received a Green Flag Awards® in 2017. The Green Flag Award® scheme recognises and rewards well-managed parks and green spaces. This scheme sets the benchmark standard for the management of recreational outdoor spaces around the world. Kaitoke received this award by providing a high standard of open spaces as well as showcasing points of interest such as Rivendell and the great riverside camp ground.

Kaitoke also received an 'Outstanding Park' Award from the New Zealand Recreation Association in 2013. The Association's judges said Kaitoke was a well-established

'Ramaroa', QEP's new entrance facility, reflects both Māori and European heritage with design references to both a Maori wharenui and former US Marines tent.

park, showcasing easily accessible outstanding native bush and river ecosystems. They also noted that visitors can enjoy a safe and secure environment with a resident ranger service and very well-maintained facilities.

Adapting to climate change

Forests in parks sequester carbon dioxide

Protected forests in regional parks network are helping to mitigate the overall effects of climate change. It is estimated that every hectare of old growth forest and new forest that is growing from restoration plantings in regional parks sequesters (locks up) roughly two-four tonnes a year of CO_2. The extensive forests in the regional park network therefore contribute to mitigating the region's carbon footprint.

The CO_2 sequestrated by forests naturally established or planted since 1989 can be commercially traded in carbon markets. Greater Wellington has entered this market in 2012, by registering 440ha of regenerating forest within the parks network in the government administered Permanent Forest Sink Initiative. This initiative provides Greater Wellington the option of selling the rights to the sequestered approximately 55,000 tonnes of CO_2 that these forests have sequestered since 2012.

This recently planted area in the southwest of QEP will sequestrate carbon dioxide during its development into a kahikatea forest

QEP coastal track after February 2018 storm. More frequent and severe storms as part of climate change means that the coastal track will progressively move inland where its less susceptible to damage.

Minimising the effects of climate changes on park assets

Climate changes are making extreme weather events more frequent and more severe. Some assets in parks such as bridges, coastal tracks and heritage structures such as weirs are vulnerable to these changes in climate. To improve the resilience of park assets, Greater Wellington is undertaking a range of management works. This includes strengthening structures and moving them away from areas vulnerable to coastal or stream bank erosion.

In 2015 extremely high localised rainfall created flooding in the Korokoro Valley which damaged tracks and undermined the historic Woollen Mills dam. Both have since been repaired and whilst undertaking repairs, Greater Wellington used the opportunity to re-align the track and make the dam much stronger so it can withstand future flood or seismic events without further significant damage. At QEP the popular coastal track is damaged in storms on a regular basis and is progressively being relocated further away from the coast (whilst still affording good coastal views).

Works to improve asset resilience are ongoing and take place as part of scheduled maintenance activities by the Greater Wellington parks maintenance team.

The historic Remutaka Rail Trail is part of the Remutaka Cycle Trail and a great ride.

Baring Head is set to become a key destination for Wellington when restoration works are completed in the lighthouse complex. There will be two bach style cottages for booked overnight accommodation, a day visitor centre, new lookout and a children's discovery trail. See the Greater Wellington website for details

SECTION 3 –

LOOKING FORWARD - EXPLORING KEY ISSUES AND OPPORTUNITIES

SECTION 3 – LOOKING FORWARD - EXPLORING KEY ISSUES AND OPPORTUNITIES

As we move towards a new PNP, we examine the changes that have taken place and key issues, opportunities and challenges for managing parks over the next ten years.

In brief the key issues, challenges and opportunities we see facing parks are:

- Achieving **shared conservation and heritage protection outcomes** with mana whenua, community stakeholders, friends groups and volunteers, concessionaires and other agencies.
- **Protecting significant ecosystems from threats** such as pest plants and animals and supporting native biodiversity and biosecurity though programmes such as 'Key Native Ecosystems. Working on **water quality** and enhancing **habitat links** to and within parks
- Ensuring regional parks are well **connected to communities** via recreation trails and offer appropriate trail opportunities. **Fostering** healthy outdoor recreation activity **participation** to support health outcomes
- Planning for **facilities** which adequately provide for an **ageing population** and for changing recreation activities such as increased use of the trail network for cycling, walking and other activities.
- Supporting more regional and international **tourism visits** to parks, for example with improved camping facilities.
- Improving our **story telling** in parks for more in-depth visitor experiences deepen understanding about our local cultural and natural history
- Working to minimise the effects of **climate change** on park assets and continuing to adapt to a changing climate
- Increasing **Commercial activities** in parks such as events, commercial dog walkers, bee keeping and mobile food vendors.

We are interested in your feedback about regional parks:

- What do you think are the most significant issues facing regional parks now and over the next ten years?
- What do you value and enjoy most about particular regional parks? For example, particular landscapes, places, trails, recreation activities?
- What should Greater Wellington do to improve our regional parks? For example, are facilities needed in a particular place or accessibility improved?
- Do you have any feedback about issues or opportunities raised in this discussion document or the supporting documents (External Influences on Parks and Farming in Regional Parks)?
- Do you have any feedback about particular aspects of the current Parks Network Plan? www.gw.govt.nz/greater-wellington-parks-network-plan/

3.1 External influences on parks

There are many influences on parks and park management including population demographic changes, changes in recreation activity preferences, a changing climate and economic influences. These external influences are explored in a detailed supporting document for the PNP review available on Greater Wellington's website. A summary of external influences is here.

Park visitor feedback

We know from our own research and monitoring that more people in the Wellington region are visiting parks, more often and participating in a growing range of activities. Overall visitor satisfaction has remained consistently high (more than 90%) for about a decade. In recent years when we have asked visitors about things that could be improved in parks, they have told us that in some places more toilet facilities are required and throughout the park network, signage and information about parks and recreation activities could be improved. We have been working on improving

these facilities in response and Greater Wellington has a new website in development. The things that parks visitors report that they value most are the sense of freedom and tranquillity and the ability to recharge in the natural environment that parks offer.

Population health and wellbeing

New Zealanders are living increasingly sedentary lifestyles and eating foods which contribute to rising rates of obesity and associated health issues. Encouraging participation in healthy outdoor recreation activities in parks can help alleviate this problem. The health benefits of parks for people can be maximised by designing facilities and spaces in parks which are easily accessible and inclusive for people with a range of abilities. Making information about recreation opportunities and promoting visits and events is also key to fostering participation.

Population changes

Overall the region's population is forecast to grow by 15% between 2018 and 2043. Almost all of the suburbs that neighbour our regional parks are projected to experience an increase in "empty nesters and retirees" (aged 60-69), "seniors" (aged 70-84) or both. The growing older population has implications for regional parks in terms of provision of facilities and activities for parks visitors, as well as changing the make-up of park volunteers. We need to plan now for supporting more fit and healthy retirees who are looking for stimunlaitng and meaningful volunteer opportunities, as well as ensuring we undertake ongoing minor upgrades for accessibility to track and other critical park facilities such as toilets.

Economics and tourism

Though Wellington City is expected to remain the key regional economic centre, the completion of the Transmission Gully motorway and improved public transport connections could result in a more dispersed model of business activity across the region, such as the Kapiti Coast and Hutt Valley.

Our park visitors are generally comprised of:

- 91% residents of the region
- 6% domestic NZ
- 3% international.

Whilst small in number, domestic and international tourists are a growing segment of park visitors and to support this demand, tourism-related employment numbers are expected to grow. This could mean more tour guide type businesses and concessionaires in parks and more commercial events seeking to capitalise on this growth.

Technology

For most people, technological devices are an inseparable part of recreation activity planning and enjoyment, providing information about activities, events and volunteering opportunities and sharing park experiences on social media. Use of technology by park visitors and for management purposes can only be expected to grow.

For management purposes various devices and technologies makes data collection easier, more accurate and more in-depth. For example we can readily collect rich data by aerial mapping and receive real time data from monitoring devices in streams to identify habitat conditions, open gates remotely with a phone call, and know who is coming and going via electronically monitored gates. We can also use technology such as drones to inspect structures post storm events with drones if required.

Electric vehicles (EV) are becoming more common. In future electric vehicle charging stations may be provided in some parks where visitor spend a significant amount of time. Public EV charging points are already available adjacent to QEP and Akatarawa Forest at commercial campgrounds (www.plugshare.com) and will become more widespread in future. Power points for small device charging are already available for campers at Kaitoke Regional Park and may be provided at other key locations in future if demand supports this service.

Sustainability

One of Greater Wellington's key sustainability goals is to continually lower the carbon footprint of our activities and operations and improve environmental outcomes. The afforestation and revegetation programs taking place across the parks network contribute significantly to carbon sequestration in the Wellington region. Natural and semi-natural parkland provides global benefits as a store of carbon in soil and trees. The growing urgency to remove more carbon from the atmosphere will increase the importance of tree planting activity and pest control in parks. Other sustainability initiatives such as waste reduction and use of renewable energy powered vehicles will continue to be rolled out across Greater Wellington.

Climate change

The effects of climate change are already being seen across the Wellington region with increases in average annual temperatures and sea levels. Impacts on parks are already apparent such as coastal erosion which has seen tracks and bridges damaged, and more pest plants and animals. An ongoing adaptive management approach is required in response to climate change.

- What do you think are the key external influences on parks?
- What changes have you noticed in your local community and how relevant do you think these changes are to regional parks?
- Have your recreation activities or equipment changed over time, and in what way?
- Do you have more or less time for recreation and leisure activities?
- What sort of electronic recreation devices do you commonly use or see in parks? Are additional facilities for electric devices required in parks?
- What role do you think Greater Wellington has in demonstrating leadership through initiative such as carbon sinks?

3.2 People and parks

In this section of the discussion document we delve a little more deeply and explore how parks and the natural environment benefits people, what our cultural connections are with our parks, and why we make significant investments of time and money in them. Put simply: we love our parks, but why?

'Healthy parks, healthy people'

We know from research, managing our parks network and intuitively from our own experiences, that public parks enrich people's lives by simply connecting people with nature. Parks are also important places for social connections and laying down lasting memories, which vary from interesting and enjoyable short visits to challenging outdoor experiences or long term commitments to conservation work. 'Healthy parks, healthy people' is a worldwide movement that connects the health of people and the health of the environment. The movement places parks at the centre of wellbeing: 'Healthy nature sustains our life, livelihoods and liveability. Conserving parks for present and future generations provides inspirational and therapeutic settings that foster lifelong connections with nature and each other. Parks that are valued and maintained are also fundamental to economic growth and vibrant and healthy communities' (Parks Victoria Guide to Healthy Parks, Healthy People 2017).

Growing scientific evidence and generations of traditional knowledge show that spending time in nature is good for our mind, body and soul. Contact with nature is critical for our physical, mental, social and spiritual health. It has positive effects on our ability to concentrate, learn, solve problems and be creative. It boosts our immune system and helps us relax (HPHP State of the evidence 2015). Through organised or casual recreation activities, volunteering, harvesting, or undertaking social visits to parks we connect with people and causes that are important to us. Our parks are common ground as places social engagement as well as refuge from busy day to day lives, and our environment provides us with life sustaining resources such as freshwater as long as we look after it well.

Figure2. People, nature and culture come together in parks (Parks Victoria 2017)

Mana whenua connections with land are often expressed in terms such as 'kaitiakitanga' – connection between land and people for healthy life. Māori traditionally connect with the land through using its resources in a sustainable way such as harvesting kai from the land and water and materials for traditional

and contemporary weaving and other customary uses. Many park visitors enjoy hunting and harvesting meat from species such as deer, goats and pigs in parks and forests, and by doing so support conservation efforts for native vegetation and bird habitat by reducing the numbers of pest animals.

It's easy to get away and have a mental health break from busy everyday urban life in a regional park. They are all close to Wellington, yet can feel far away and remote. Looking east towards Turakirae Head from Baring Head, part of East Harbour Regional Park.

Parks support physical and mental and wellbeing

We can derive many benefits from engaging in activities in local and regional parks. Benefits identified in the Healthy parks, Healthy People, State of the evidence 2015 include:

- Parks provide the basis for many different recreation activities for physical and mental health benefits
- Exercising outdoors in green space is more beneficial for mental health than going to the gym
- Parks can be places for social connections, alleviating loneliness and providing purpose and meaning.
- Volunteering work in nature or simply bird watching is beneficial for well being
- Nature play and time outdoors is good for children and their development, as is being with animals and learning about nature through experience

Studies in stress recovery have also shown that exposure to nature facilitates faster recovery from health problems and the stresses of daily life. Natural landscapes offer 'green breaks' where psychological benefit can be gained by easing issues such as fatigue and stress.

Parks which meet people's needs well come about by good planning and management. In urban areas this is often referred to as 'placemaking' and there is a lot of research and written guidance about how to create healthy gathering, active recreation or contemplative places. Attributes of places or areas of parks which support health and wellbeing include:

Accessibility – enhancing access to and within parks with trail and public transport connections. Working to overcome barriers to visiting parks and participating in healthy outdoor recreation activities with promotions, 'come and try' events and other activities. Designing facilities following universal access principles also reduces barriers.

Energised shared spaces or 'sweets spots' – focal points where people come together for events and volunteering activities such as growing plants or undertaking heritage restoration works are important.

Mix it up and embrace unique character – providing a variety of places which are different, unusual, or unique can be helpful in promoting physical activity and visits. A variety of land uses, building types, and public spaces can make parks more interesting. Regional parks already have a variety of heritage buildings, features and stories but we can do more by supporting and enhancing unique features through activities such as storytelling or public art works in parks. Interesting nature play spaces can be a primary attraction to parks for families and carers. The new Wellington City Council nature play spaces on Mount Victoria are a good example of this.

Supporting economic values - parks can directly and indirectly support local businesses via concessionaire services (such as food and beverages, grazing licences) and recreation club activities and events which require equipment sourced from other businesses in the local economy.

Empowering champions for health – supporting volunteer and community group activities in parks has flow on effects for others. A range of people can become champions for health and wellbeing of other people and parks.

- What features of Wellington's regional parks are important for your health and well-being?
- Are there special places in parks which 'nourish your soul'?
- What could be done to improve connections between people and our regional parks?
- What features or places can we enhance in our parks to further develop 'unique character'?

3.2.1 Volunteering in parks

Greater Wellington works with many volunteers, friends groups, recreation clubs, conservation groups and others to achieve shared goals and outcomes. The primary areas of volunteer activity are natural and cultural heritage conservation work. This includes:

- Supporting natural habitat restoration through weed removal work and planting of native species
- Pest animal reduction through trap setting and maintenance
- Plant and animal species monitoring work
- Growing plants and gathering local seed for restoration activities
- Track and forest road maintenance and realignments
- Additional fund raising for projects o enable more work to be done
- Heritage building and structure maintenance and preservation work.

The work volunteers do is of immense value to Greater Wellington, as well as contributing to volunteers' wellbeing through participation in the community, skill sharing, education, exercise and exposure to nature. Volunteers also contribute to achieving Greater Wellington's Long Term Plan community outcomes for an **engaged community** and a **healthy environment.**

Heritage building restoration works by the Friends of Baring Head.

The QEP nursery where volunteers raise thousands of native plants for restoration work.

The Greater Wellington Volunteer Strategy outlines a framework for supporting and guiding work with volunteers. Greater Wellington's vison and strategic goals for engaging with volunteers are summarised here as:

Figure 3. Volunteer Strategy goals

The types of activities Greater Wellington and its volunteers work together on and some of the benefits of these partnerships are illustrated here:

Figure 4. Volunteering works in parks are diverse and the benefits from volunteer time and effort significant.

The Volunteer Strategy identifies that, in addition to their direct contribution, volunteers provide points of connection between Greater Wellington and different communities across the Wellington region. This enables Greater Wellington to better understand what people want to achieve in their local area. The Strategy notes that volunteer groups are important and effective channels for encouraging and enabling individuals to participate in their community and care for their environment.

The Strategy observes that volunteer numbers are likely to continue to grow in the coming years as the population ages and greater numbers of retirees seek active, meaningful engagement in their communities. At present there are roughly 43,000 people aged 65 plus across Wellington, Porirua and the Hutt Valley. By 2033 the number is expected to almost double to 85,000 people according to Ministry of Social Development 2017 projections.

Given that much of Greater Wellington's volunteer workforce is currently based in our regional parks, this will likely create a growing pool of volunteers interested in working in parks, alongside corporate and community groups. With increased numbers of volunteers will come more benefits for parks and the environment, but additional resources will also be required to co-ordinate and supported volunteer work contributions.

- Do you have reflections on other volunteering experiences that may be relevant to Greater Wellington's work across the parks network?
- What benefits do you derive from volunteering?
- What more do you think Greater Wellington should do to support volunteer work in parks?
- Do you find it easy to find out about opportunities to partner with Greater Wellington?

3.3 Managing historic and cultural heritage features of parks

Regional parks have an interesting and wide range of built and natural heritage features, assets and stories associated with them. Historic and cultural heritage features reflect the human and landscape history of the Wellington region and form an integral component of a 'sense of place' of parks. In many parks the built heritage structures or natural heritage features are the key attraction for park visits, such as dams and waterfalls, hill tops and other viewpoints with heritage relics such as WW11 bunkers or lookouts. Parks also have many registered archaeological sites of significance to mana whenua which are not publicly identified to minimise damage to them.

Greater Wellington's management of heritage assets is guided by the ***Heritage New Zealand Pouhere Taonga Act*** 2014, the Resource Management Act 1991, Regional Policy Statement, proposed Natural Resources Plan (which contains a schedule of heritage assets)and the PNP, which is supported by the Parks Forests and Reserves Bylaws 2016. Greater Wellington also has a 'memorandum of partnership' with mana whenua to which supports cultural heritage preservation. An Accidental Discovery Protocol is in place to guide day to day park management if archaeological relics are found.

To manage heritage assets and features, Greater Wellington works with partners and others with appropriate expertise to preserve and protect them. Conservation management plans and studies are undertaken where required to identify significance and provide guidance about preservation and interpretation activities. In parks and places such as QEP and Baring Head where there are complex layers of historic heritage, heritage plans have been developed to guide management and improvement work.

As with all its work, Greater Wellington must prioritise resources for heritage preservation works. To date the focus has been upon heritage assets which are either a potential threat to visitor safety or most under threat of having their heritage values diminished from degradation. Dams, bridges, tunnels and other assets in streams and waterways will be a priority for investment because of increased frequency of severe weather events brought about by climate change. Other heritage assets such as munitions bunkers are considered for work as resources permit or where external assistance becomes available through the support of volunteers and/ or external funds.

Improving story telling in parks about the heritage features or stories of people who have lived or worked in parks or of historic events is a key opportunity and is likely to become more of a focus for park related communications in future. We think that revealing more of the stories of our parks will support better understanding about why they are special and unique places, and provide visitors with new understanding of them.

- What do you think are the most significant heritage features or stories of regional parks and why?
- Where do you think we should direct resources to revealing more heritage stories in parks?
- What types of media do you prefer for heritage interpretation when you are in parks? E.g. smart phone, signs, booklets etc

3.4 Managing significant landscapes

Wellington's regional parks have a rich diversity of landscape types. Park visitors can enjoy grassy open tops, old growth lush native bush, beech forest gullies, regenerating bush, plantation forest, farmland, rugged escarpments, rolling coastal dunes or sandy beaches. The variety of landscape types on offer is a huge benefit for residents and visitors who can choose a recreation activity based on the landscape type.

Values about landscapes change over time. For example, in the past lush native forests were valued as resources for timber harvesting and now their primary value is preservation for native bird and animal habitat and recreation enjoyment. While human influences on the landscape are apparent in all our parks, they are also changing from natural processes such as erosion, fire, flooding and the slow natural process of bush regeneration. Major public infrastructure projects are also changing the scenery within parks. The Transmission Gully Motorway is gradually becoming a new landscape feature of Belmont and Battle Hill parks. Utilities services such as power and gas lines are also a feature in some areas of parks such as Belmont, Battle Hill, Queen Elizabeth and Akatarawa Forest.

The PNP provides directions for management of landscapes which are considered to be significant.

Further directions are identified within the Regional Policy Statement and District Plan provisions relevant to landscape or 'significant natural resource' areas. These areas include:

- QEP, the coastal dune system and Whareroa Dune Fields (Whareroa Duneland's, identified as outstanding natural landscape in the partially operative Kāpiti Coast District Council District Plan)
- Akatarawa Forest, an area on the north western boundary and protected ridgelines in the south eastern corner (Akatarawa Corridor, identified as outstanding natural landscape in the partially operative Kāpiti Coast District Council District Plan)
- Pakuratahi Forest, southwestern area (Upper Hutt City Council District Plan)
- Belmont, ridgelines and hilltops in the western part of the park (Wellington City District Plan)
- Baring Head escarpment and the Parangarahu Lakes (Hutt City Council District Plan)

Given that human values about landscapes change over time we are interested in feedback about what aspects and attributes of local landscapes are important to you and why?

- What landscapes in regional parks are important to you and why?
- What types of landscapes do you think are important to maintain?
- Do you value having a variety of landscapes e.g. grasslands, thick forest, wetlands, coastal?
- Are there particular park landscape features that are important and what are they?

Baring Head is a prominent part of Wellington's southern landscape. The escarpment is considered to regionally significant and maintained as open grassy area with sheep grazing.

3.5 Managing the environment and parks

Greater Wellington's environmental management in parks aims to achieve the our Community Outcome of "**Healthy Environment:** *An environment with clean air, fresh water, healthy soils and diverse ecosystems that supports community needs".*

How we meet this outcome is directed by the PNP outcomes. The current PNP biodiversity and ecosystems outcomes are:

Outcome 1- *ecosystems of important ecological value are protected and cared for*

Outcome 2- *significant, degraded ecosystems and indigenous biodiversity are restored to a healthy functioning state*

Outcome 3- *ecological connections between natural areas and within catchments of regional parks and adjoining lands are enhanced.*

Greater Wellington has a range of strategic plans and operational programmes that contribute to the achievement of outcomes set out in the PNP:

- Biodiversity Strategy
- The Regional Pest Management Plan (currently under review)
- Proposed Natural Resources Plan (PNRP), which includes the Whaitua programme
- Key Native Ecosystems (KNE) programme
- Te Awarua-o-Porirua Harbour and catchment Strategy and Action Plan
- Freshwater Fish programme
- Wetland programme
- Land management programme, which includes the development and implementation of Farm Environmental Plans

These plans and programmes support work to enhance parks. Community groups, working in collaboration with Greater Wellington support these programmes and undertake valuable conservation work.

Proposed Natural Resources Plan

The proposed Natural Resources Plan for the Wellington Region (PNRP) identifies outcomes for the sustainable management of natural and physical resources in the region (across land tenures) to achieve the purpose of the Resource Management Act (1991). The PNRP contains policies, rules and methods for the people and organisations that use or protect the region's resources. Although the plan is in draft form, under section 83B(3) of the RMA all the rules in the plan have immediate legal effect from 1 July 2015. However some changes may be made before the plan is finalised.

The PNRP identifies streams, rivers, wetlands and coastal areas that have particularly high values for indigenous biodiversity, mana whenua relationships and use, recreation, trout fishery, historic heritage, geological features and surf breaks. The following section identifies how methods and rules in the PNRP will direct management of parks.

Encouraging sustainable land management practices

The PNRP fosters sustainable land management via a number of methods. Methods 28 and 12 support working in partnership with others to achieve ecosystem wide objectives. For example, at QEP the Maclean Trust / Greater Wellington partnership will restore 25ha of mostly peatland on the north-eastern boundary of QEP between State Highway One and Poplar Avenue. The work here will include the removal of invasive weeds, particularly gorse, and extensive re-planting of native species, leading to enhanced biodiversity and improved water quality. In other cases parks are demonstrating best practice for others with works such as plantings for shade along streams which supports aquatic ecosystem health.

Whareroa Stream, QEP. Stock are excluded and habitat restoration works are in progress such as weed removal and planting stream banks with native vegetation to support aquatic habitat.

Stock access

Reducing the impacts of farmed stock on streams and water quality is important. The PNRP provides directions for minimising impacts such as effluent from stock excrement on water quality and pugging and damage to stream banks and beds from stock directly accessing waterways. For example, Rule 97 identifies that stock must be excluded from all waterways which are classified as Category 1 or 2 as well as wetlands which are identified as significant or outstanding in Schedule F3.

Examples of parks implementation of these rules are:

- Stock exclusion from Swampy Gully at Battle Hill (a significant natural wetland)
- Stock exclusion from Whareroa Stream in QEP (a Category 1 surface waterway)
- Vehicle exclusions from Whakatikei Wetland in the Akatarawa Forest (a significant natural wetland).

Aerial spraying of agrichemicals

The PNRP identifies that consent is required for the aerial spraying of agrichemicals over natural, significant and outstanding natural wetlands (Rule 105(i)). Aerial spraying of agrichemicals over land does not require consent, but is only permitted if a number of conditions are met, such as supervision of the activity by a qualified operator, public notification and avoidance of sensitive areas such as streams and wetlands.

In regional parks this rule was implemented with a resource consent for the aerial spraying of the aquatic weed species Egeria (oxygen weed) in the Gollans Wetland (a significant natural wetland), which adjoins Lake Kohangatera in East Harbour Regional Park. Spraying this weed has reduced its spread and contributes to a more healthy aquatic environment for native fish.

Providing fish passage through culverts and other in-stream structures

The PNRP identifies areas which are highly valued for their native fish populations in Schedule F1. It requires that all new structures are to provide for passage up and downs stream of native fish (General conditions of activities, Provision 5.5.4). Restoring fish passage where it has been lost (with existing structures or obstacles) is also promoted.

At Battle Hill Farm Forest Park fish passage has been restored in a Horokiri Stream tributary behind the woodshed. These rock structures can be readily seen and for six species of threatened fish. Any instream structures we install will be designed to provide fish passage. Other works to remove substantial fish barriers have taken place in the Pakuratahi Forest and in Belmont Regional Park.

Reducing sediment run off to waterways

Reducing sediment-laden runoff to waterways minimises downstream effects in estuaries and potential upstream flooding. The PNRP provides directions to support the reduction of sediment runoff. For example, Rule 102 ensures that harvesting exotic plantation forest (eg in Akatarawa or Pakuratahi Forests) is managed so that sediment and slash generated by the activity does not enter adjoining waterways.

Whaitua programme

As part of work to implement the National Policy Statement for Freshwater Management (NPS-FM), Greater Wellington has established the Whaitua programme. The Māori word 'whaitua' means a designated space or catchment – Greater Wellington has divided the region into five of these whaitua (see Figure 1). The Whaitua programme aims to work closely with mana whenua, territorial authority partners and communities through establishing Whaitua Committees that make recommendations to Greater Wellington on water management into the future.

Map 2. Boundaries of the five whaitua in the Wellington region

The NPS-FM identifies minimum states for freshwater that Councils must seek to achieve, so that the overall water quality in a region is maintained or improved. Whaitua Committees will produce Whaitua Implementation Programmes (WIPs) which describe the ways in which the people from that catchment want to manage their water now and for future generations through a range of integrated tools, policies and strategies. Some parts of the WIP will become regulations through a plan change to the PNRP, while others will driver implementation options through becoming part of strategic planning such as the PNP.

The parks network is spread across three Whaitua catchments. The management of parks within each catchment will likely be influenced in future by the limits defined under each Whaitua implementation programme and will be different for each park. For example the Te Awarua-o-Porirua Whaitua has a significant focus on reducing excessive sediment entering Porirua Harbour so will consider all possible upstream sources of sediment. Sediment management on farmed rural land, such as the Belmont Regional Park may also change through the Whaitua implementation process. However within parks where there are farming activities new Farm Environment Plans will define operational requirements and possible changes, such as further retirement of grazed areas or fencing of streams and tributaries to exclude stock.

Whaitua committee	Parks within Whaitua
Te Awarua-o-Porirua Whaitua – established December 2014	Battle Hill Farm Forest Park Belmont - western catchment
Wellington Harbour and Hutt Valley Whaitua – in process of establishment	Belmont - eastern catchment Kaitoke RP Pakuratahi Forest East Harbour RP Wainuiomata Recreation Area
Kāpiti Coast Whaitua – to be established	QEP

Te Awarua-o-Porirua Harbour and Catchment Strategy and Action Plan

This strategy is relevant to Belmont and Battle Hill parks. The aims of the strategy are to reduce sediment and pollutants entering Porirua Harbour and to restore its ecological health, which is currently considered to be in degraded condition. Greater Wellington is contributing to restoration works by progressively fencing and establishing riparian plantings along streams within these parks such as the Horokiri Stream in Battle Hill Farm Forest Park, and Duck Creek and Cannons Creek in Belmont Regional Park.

Key Native Ecosystem programme (KNE)

Greater Wellington's Biodiversity Strategy is implemented via the Key Native Ecosystems (KNE) programme and other operational programmes. The KNE programme delivers works to reduce pest plant and animal's numbers and supports native plants and animals. The programme focuses on protecting the highest biodiversity value sites within the parks as well as habitat connections.

All parks have KNE sites within them and for some parks the KNE are is most of the park; such as Pakuratahi Forest, Wainuiomata Recreation Area and Kaitoke Regional Park. Some KNE areas are part of ecological corridors or biolinks between larger forests such as the DOC managed Tararua and Remutaka Forest Parks.

Wetland restoration programme

Wetlands provide important native fish habitat and support a variety of wetland plants. However, it is estimated that only 2.3% of the region's freshwater wetlands now remain. In the past wetlands were often viewed as unproductive areas and drained to provide more grassland for stock. Greater Wellington's wetland restoration programme aims to enhance and restore wetlands within parks under the KNE programme. Works include excluding grazing stock, reducing the impacts of pest plants and animals and replanting with local native species. Notable wetlands in parks include the Parangarahu Lakes in East Harbour Regional Park and the QEP wetlands near Mackays Crossing.

Freshwater fish programme

Degraded habitat for native fresh water fish, declining populations and reduced distribution of species are significant aquatic ecosystem health issues across the region. Degradation is attributed to issues such as:

- In-stream structures acting as a barrier to fish movements, such as flood gates, dams, weirs, fords, pipes and culverts
- Vegetation clearance along streams resulting in little shade for aquatic life
- Stock access to streams contributing to sediment and nutrient run off.

The freshwater fish programme is helping to restore the habitat of native fish through works such as removal of stream obstacles, planting stream margins for shade and fencing to exclude stock.

Biosecurity

Greater Wellington's biosecurity work is guided by the Regional Pest Management Plan which is currently under review. The implementation programme includes pest species number monitoring, pest plant and animal control and education and awareness raising work. Pest plants and animals are reduced by methods such as weeding, herbicide spraying, trapping, shooting and aerial applications of 1080 pellets in some areas.

Greater Wellington only uses herbicides and pesticides which have been assessed and approved for use by the Environmental Protection Authority, and application is undertaken in accordance with standards and protocols designed to protect the environment park visitors from potent negative effects. Biosecurity works are undertaken in accordance with the relevant legislation and rules such as the Hazardous Substances and New Organisms Act (1996), Management of Agrichemicals Code of Practice (NZS 8409:2004) and proposed Natural Resource Plan methods and rules.

In parks biosecurity works are implemented via the KNE programme and park operational programmes. For example, at the Battle Hill Bush KNE site pest plant and animal control work is undertaken to reduce browsing by non-native animals (e.g. possums), support native plant regeneration and increase the native bird populations (e.g. rat control). Elsewhere in parks biosecurity works support revegetation projects and particular rare or threatened flora or fauna species.

Native vegetation restoration planting

A number of parks have large areas which are currently grazed by stock for landscape maintenance purposes. In many parks when these areas are retired from grazing, native vegetation regeneration occurs, often with the assistance of pest plant control work. In some areas where it is not appropriate or effective to allow natural regeneration to occur, for example where this would pose a fire risk, we undertake native vegetation planting. Large scale planting is costly so restoration options such as trials of low cost planting techniques are sometimes undertaken to determine the most effective methods for particular parks. Community partnership works and volunteer assistance such are currently the key ways larger scale restoration activities take place in parks. Community partnerships deliver significant results. For example in 2016, 446 community partners planted more than 20,000 plants in regional parks.

So what does this mean for changes to the PNP?

- Should we change how we undertake our environmental management? If so, how?
- Is Greater Wellington's current approach to biosecurity in the Parks network working well?
- What role could the community be encouraged take to work more with Greater Wellington?

3.6 Managing parks with stock grazing activities

Regional parks offer visitors a range of landscape types to recreate in including open grassy areas such as the escarpment of Baring Head and open tops of Belmont Regional Park. Farm animals including sheep and cattle are part of the rural character and open space management regime of Battle Hill, Belmont, Kaitoke, Baring Head and areas of Queen Elizabeth Park.

Whilst farming and grazing activities have largely been accepted and considered a positive attribute of regional parks for many visitors and neighbouring communities of parks, others are concerned about farming activities and what impacts they have on the natural environment. In recent times farming practices have changed a lot and in some parks these changes have been obvious to park visitors. Informed by scientific practice and technological advances farmers are undertaking their day to day activities differently. **To explore these changes and address concerns about farming in parks we have developed a separate supporting document called 'Farming in regional parks' which is available on the Greater Wellington website.** A summary of key issues is outlined here.

All our parks are different and Greater Wellington's and grazing licence holder's management approach is influenced by the landscape, soil types, climate, stock carrying capacity of the land and a range of other factors. Sustainable Land Use Plans inform how different parks will be managed with grazing activities.

The reasons for undertaking stock grazing in parks are varied including:

- Education and interpretation – Battle Hill was originally purchased for farming, forestry and recreation purposes.
- Cost effective land management – grazing is an efficient and effective way to maintain grassy open spaces for recreational use and enjoyment.
- Maintaining significant landscapes which are celebrated for their open space such as the wide open hill tops of Belmont and dramatic escarpment of Baring Head.
- Maintaining heritage values - many of the parks have a long history of farming and seeing farm animals in the park is reported as a positive experience by many park visitors.
- Reducing the risk of fires; and as a means of educating the public on sustainable farming practices. This is an important consideration as we experience climate change with more frequent and prolonged dry spells which may make the region increasingly fire prone.

Concerns expressed about farming in parks have included:

- The use of 'recreation reserves' for farming, and the restriction of access to public land as a result
- Pest plant and animal control, and in particular the use of spraying to control pest plants
- Farming's impact on soil and run off of sediment and nutrients to freshwater
- Changes in the way areas of park are farmed and the 'intensification' of these activities and how it may be impacting the environment

Looking ahead

As well as continually improving the way park land is managed with science, technology and resources, the opportunity exists for Greater Wellington, partners and stakeholders to change land management practices to achieve shared goals. This includes trialling different restoration methods, progressively eradicating weeds in different ways, protecting wetlands and streams areas from all livestock and horses, and adapting to climate change. Community values and viewpoints change over time. We are interested in your feedback about how

Greater Wellington and farm licence holders are managing park land with farming activities whilst providing for public access and enjoyment.

Retired and grazed area in Belmont Regional Park

- Do you have any feedback about native vegetation restoration works or grazing as a means of managing large areas of parks?

3.7 Facilities and services in parks

Greater Wellington's regional parks support enjoyable park visits and protect the environment with a wide range of facilities including roads, tracks, bridges, toilets, picnic tables, information panels, camping areas, buildings, and signage. There are also heritage assets such as historic dams, WW2 bunkers, Victorian era rail tunnels, buildings and numerous other archaeological sites.

A wide range of services are also provided such as park rangers, visitor information and interpretation, security, facility cleaning, public events and pest plant and animal management, Recreation information is also a critical service and is provided via the website, signs and via social media.

Bridges are important for access and environmental protection in parks but they are costly to maintain and replace.

Having the right facilities and services in the right places and servicing them to meet visitor needs and expectations contributes to higher quality recreation experiences and enjoyment of parks and takes a significant amount of work.

Park asset management activities are connected to Greater Wellington's higher level outcomes; a resilient community which is safe, prosperous, connected and healthy and a healthy productive and sustainable environment.

Levels of service

A detailed parks asset management plan guides management of park facilities and services. It considers the results of visitor feedback from a long term visitor research survey and identifies where changes are required as a result of asset age and condition, demand from visitors, feedback from monitoring and broader changes in the Wellington region population and tourism numbers. For example, we know from our visitor research that more toilets and better signs leading to and within parks are required, and these are things that we are focusing on to improve.

The asset management plan draws on the guidance of the PNP to identify overall levels of service for different facilities and services in parks. More recent changes in demand include growth in cycling, in particular mountain biking, accessible short easy walks and in the numbers of people camping at Greater Wellington's three campgrounds (Kaitoke, Battle Hill and Dry Creek in Belmont).

Another key consideration in park facility and service management is the need to adapt to a rapidly changing climate and manage assets so that they can withstand the effects of higher rainfall or prolonged periods of drought or relocate assets such as tracks if this is appropriate.

Accessibility

The population of the Wellington region is ageing and the recreation activities people undertake change as people age. An ageing population, with increased life expectancy, means more people have more time to enjoy outdoor recreation. This has significant implications for provision of facilities, including increased demand for quality facilities enabling higher levels of accessibility. The number of people in the 65 years and over population is expected to more than double within the Wellington Region by 2043. Providing facilities which are accessible to a wide range of people from the young to old and people of all ages in between with limited mobility, means following 'universal access' principles for facilities wherever we can, and providing highly accessible facilities in key locations in parks. Most recently a new barrier free path and toilet have been

installed at the Dry Creek campground in Belmont RP and at QEP 'Ramaroa' the new visitor entrance hub has been designed with accessibility in mind.

Balancing the access needs of cyclists and other users on the popular Remutaka Rail Trail whil limiting access for vehicles and motorbikes resulted in several new barriers being installed that now suit 95% of non-motorised users. Insert PICTURE.

- Do you have any feedback for us about particular parks and their facilities or services?
- Are there particular facilities or services that would make parks more accessible for you, and if so what?
- Do you find it easy to find out about recreation activities in parks which suit your needs?

For safety and enjoyment park visitors are reminded to share tracks and park roads with care in all regional parks

Sharing park facilities

Many facilities in parks are shared by different activity groups. Rather than duplicate facilities such as trails we ask that visitors 'share with care'. In a practical way this means:

- Sharing facilities and considering the enjoyment of others
- Caring for the environment and leaving no trace of your visit
- Respecting temporary closures of tracks, roads or other facilities
- Being thoughtful and minimising impacts in any way you can.

It is generally not desirable or appropriate to duplicate trails and fragment bushland areas to create numerous single user trails (such as mountain bike or horse rider only, accepting that many single user walking trails are because of terrain). Fragmented trails can lead to more weed infestations and diminished habitat values for native birds and animals.

Do you have any experiences in regional parks relating to sharing facilities that you would like to share with Greater Wellington? We are interested in feedback about shared use of facilities and any issues or 'hot spots' in particular parks for management attention.

3.7.1 Sustainable management and use of parks

Greater Wellington is committed to working more sustainably wherever it operates, including throughout the park network and encourages others to do the same. Opportunities to work sustainably include procurement for park materials and services and other park operational work. A number of examples of day to day sustainable park management practices are detailed below, but these are just a snapshot.

Procurement

Greater Wellington is preparing guidance for its goods and service providers to help us achieve more sustainable outcomes for the region. For example, Greater Wellington could lead by giving preference to businesses that can demonstrate that they can reduce greenhouse gas emissions, reduce waste in all forms, and enhance the natural environment.

Organisation wide, Greater Wellington now has eight electric and hybrid fleet vehicles for work related travel in the region. In parks, procurement decisions consider sustainability such trying to source timber that is NZ Forest Stewardship Council (FSC) certified. This means they are internationally certified as sustainably harvested. Electric vehicle charging stations for the public are not currently provided in parks but may be installed if demand is apparent in future.

Recycling is good for the environment and encouraged at all events in parks.

Lower carbon options

As a region and nation, we are gradually moving to a lower carbon economy. This means using less non-renewable fossil fuels and more renewable energy such as wind, solar and hydroelectric power. In its management of the Parks network Greater Wellington is adopting measures including electric maintenance equipment (e.g. battery operated scrub bars and leaf blowers) and is investigating other management measures. Drones can provide low energy and safer parks assessments, for example, to review asset conditions after major weather events, to photograph and monitor weeds or pests incursions or the effectiveness of weed/ pest treatments. In biodiversity management cameras have been used for many years to monitor pest animal presence and movements. Use of the right technologies and innovative practices are ways that Greater Wellington can decrease its carbon emissions.

Greater Wellington is also using the parks network to sequester (remove) carbon form the atmosphere. Some small areas of previously exotic forest have been harvested and are being managed to naturally revert to native vegetation; for example, the former pine forest at Stratton Street at Belmont. The 440 ha of regenerating vegetation registered in the Permanent Forest Sink Initiative sequesters about four tonnes of CO_2 per hectare every year. Greater Wellington is also investigating options for retiring areas of currently grazed land and either allowing slow natural regeneration process to take place, or actively restoring them as resources become available.

Smarter access to parks and use of technology

We are progressively changing the way we manage our gates to and within parks. Using keyless technology we now have automatic closing gates at most parks and forests and keyless locks for many gates within parks. This change has delivered lots of benefits including:

- Lower operating costs and better use of park ranger time without the need for daily manual opening and closing of gates and less time spent opening and closing multiple gates with parks and forests
- Less ranger or security call outs for people stuck in parks with vehicles after park hours
- Better overall security for parks with keyless entry which is difficult to copy
- Collection of useful data for management purposes about park and forest use and frequency of park visits by different user groups
- Health and safety benefits, particularly when combined with security cameras.

We also have keyless entry for gate access along Te Ara o Whareroa for people in wheelchairs or on bikes with tag-along trailers who can't easily pass through the narrow barriers that block unwanted motor bike and motor vehicle access. All of these improvements have made a significant difference for park managers and the visiting public and will continue to be used as different options using technology become available.

Following the requirements of the Privacy Act, we are also increasingly using cameras for management purposes such as at entry points to parks or where there are particular management issues such as vandalism. Drones equipped with cameras are likely to be increasingly used for management purpose in future such as gathering information about asset condition after storm events and for scientific research purposes.

Managing camper waste better at Kaitoke Regional Park

At Kaitoke large recycling facilities have been installed in the upper and lower campgrounds so that conscientious campers can send their waste products to recycling. The usual cans, glass, plastics, paper and cardboard can be sent to recycling, and reducing the amount of rubbish going to the land fill. By designing these areas for campers to use it has also reduced park ranger's time sorting recycling.

Queen Elizabeth Park – Ramaroa entrance hub

'Ramaroa' is the new entrance area hub at QEP housing public toilets, information about the park, the park rangers' office and a meeting room. It is the new focal point for this entrance area of the park at Mackays Crossing. Greater Wellington will add interpretation

panels to reveal key stories of the park. The name Ramaroa can be interpreted as eternal flame or guiding light projecting a radiance that invites and connects the community and visitors into the park.

The building and its services were designed with sustainability and accessibility in mind.

Culturally integrated design - the design of 'Ramaroa' tilted roof line and walls and large areas of deck reference both a traditiaonl Māori 'wharenui' and at the same time the style of the tents used by US Marines who once occupied this area. Angled screens are reminiscent of traditional Māori kites (manu tuktuku).

Energy consumption – it has ultra-high efficiency lighting and high efficiency heat pump heating, alongside passive energy design (including solid mass concrete walls, double glazing and solar screens) to ensure the buildings maintain a comfortable temperature. Only FSC (Forestry Stewardship Council) certified sustainable hardwoods timbers are used in the building. Solar panels may be added In future.

Recycled materials – the former rangers office was relocated and the toilets renovated to be part of the Ramaroa hub.

Water sensitive design - rain water is harvested from the building roofs, treated and used for drinking. Over flow nourishes the native plants.

Universal access - the building and its facilities are fully accessible for people with limited mobility. The site of Ramaroa was chosen so that visitors have good access to rangers, and so that they have active surveillance of this important visitor hub area where there is a lot going on.

Indigenous plants – as you would expect in a park, Ramaroa's surrounds are landscaped with native plants sourced from local seed and grown in the park nursery by volunteers. Photos required

Ramaroa is a good example of how our parks are demonstrating innovative, effective and efficient implementation of Greater Wellington policies related to sustainability. Our buildings and other assets are developed in accordance with asset management plans, agreed levels of service and our park visitor's and stakeholder's needs. We work with mana whenua from the beginning of projects and celebrate our key milestones and achievements with them.

- What does sustainability mean to you?
- Do you think it important that Greater Wellington practices and exemplifies high quality sustainability practice? Do you have any expectations about sustainability and parks?
- Would you support Greater Wellington using parks to exemplify sustainability practices even if it cost more to implement?
- Do you think Greater Wellington should provide electric vehicle charging stations in parks?
- Do you have any suggestions about other improvements relating to sustainable management of parks?

3.7.2 Education and interpretation activities and opportunities

Regional parks and forests provide a wealth of learning opportunities which range from school visits to park interpretation panels revealing stories about significant features, ranger talks and events. Our park partners which include local iwi and friends groups as well as concessionaires also have a key role in revealing park stories and supporting conservation work.

Identifying and reveal interesting aspects of the most significant features of parks supports a more in-depth visitor experience, and supports understanding about why resources are invested in protection and preservation works. This is based on the premise that from understanding comes appreciation, and from appreciation comes motivation for protection of natural and cultural resources.

Formal learning opportunities are also supported in parks with facilities such as the woolshed classrooms in Belmont and Battle Hill parks with ranger talks often part of these education activities. Informal learning opportunities are numerous in parks from summer events, to interpretation panels, information on the website and volunteer and friend's group activities.

Greater Wellington also works with universities to support student learning and provide 'real world' projects in parks with benefits for the students, supporting friends groups and ultimately park visitors if student project ideas are carried through to fruition. Most recently we have worked with Massey University Design School students and Victoria University Landscape Architecture students to develop concepts for revealing heritage stories to visitors at Baring Head in East Harbour Regional Park. Parks also provide opportunities for university researchers to investigate natural ecosystems and we register a number of projects each year.

The delivery mechanisms for park interpretation are changing and whilst park based interpretation panels are likely to remain a core form of delivery, stories are increasingly being told online via our hand held devices where internet connections are good. Providing stories electronically means itis easy to update and change stories for example for seasonal changes or for different audiences.

We are interested in what your preferences are for learning about the interesting stories of parks. Do you prefer traditional park story telling such as face to face via ranger lead walks and talks and static interpretation panels, do you prefer to read up online, or perhaps it's a combination of both or something else?

- What do you think we should be doing more or less of in our regional parks to provide details about interesting features or issues? What aspects of regional parks are you curious about?
- Have you been in a park with one of our concessionaires or joined an events programme where park stories were told?
- How do you prefer to learn about park features when you are visiting? Would you like to see more story telling in parks, or would you prefer to look it up electronically – such as on the website or in apps?

3.7.3 Art in parks

Regional park spaces and natural environments already provide a beautiful 'canvases' and opportunities for painting outdoors, photography and inspiration for other art works. Public art work installations in parks can be educational, interpretive and engaging and create a unique feature for a park. Art works can provide character and add to the sense of place of a park.

Art has a significant but subtle place in our regional parks; most often through drawing and painting of landscapes, photography, drama such as plays, student projects, Māori heritage artworks such as symbolic carvings and representations and art works created from park materials such as flax and grass weaving and driftwood sculptures. In future we could see more temporary or permanent sculptures, interpretive art trails or other art works.

- Do you think there should be more art in parks and what could it be?
- Do our regional park landscapes and features inspire your own creative efforts?
- What role do you think regional parks have in the world of creative art?

Top to bottom: Kowhaiwhai panels on the Ramaroa entry hub at QEP illustrate the activities of the park. Massey University design students proposals for orientation signs at Baring Head.

3.7.4 Park concessionaires, licence and leases

A range of commercial and non-commercial activities take place in parks under management agreements which range from one off event 'concessions' permits to longer term licences and leases. There are many one off events in parks such as weddings or orienteering, weekly or daily visits by businesses such as Lord of the Rings Tours or commercial dog walkers, recurring events such as annual markets or fairs, and seasonal business activities as ice cream or fish and chip vans visiting campgrounds. A concession is a formal relationship between the concession holder and Greater Wellington, ensuring that both parties are aware of their obligations. Concessionaires pay an application fee and park user fees. Non-commercial events with less than 150 participants will generally require a concession (to manage the activity) but not a fee.

Activities which take place over a longer term are generally authorised under licence or lease agreements. For example stock grazing, bee keeping and recreation clubs based in parks. Each proposal for a licence to operate and utilise a park is assessed on a case by case basis and has specific licence conditions to govern use. In the Akatarawa and Pakuratahi Forests, commercial forestry agreements are in place for cutting rights and forest maintenance activities, and consider how day to day operational forestry work and recreation activity use are managed. A National Environment Standard for plantation forestry management guides best practice and minimises impacts.

Long term lease arrangements in parks include the Pāekakariki Surf Lifesaving club, heritage tramway in QEP and more recently the Wellington Group of Riding for Disabled at Battle Hill. All deliver benefits for the public good and are considered to be compatible with park values, provided impacts are minimised on an ongoing basis (guided by operating licence conditions).

Compatibility with park purpose, public access, safety and minimising impacts on natural and cultural values are core considerations for all types of commercial and non-commercial activity in parks. Proposals for activities in parks which are not compatible with these values (and the legislation by which the park is governed such as the Reserves Act, Local Government Act or Wellington Region Water Board Act) are usually not permitted in parks.

The revenue gained from these activities directly benefits parks. It helps to offset the cost of managing parks and funds infrastructure improvements such as fencing, track upgrades and new works such as interpretation of significant stories, seats, picnic tables and tracks. Permanent revenue streams such as lease or licence fees from service organisations such as telecommunication towers or pipelines mean that parks operational budgets are less dependent on direct funding from the rate payers of the Wellington region. As the Wellington region urban population grows and spreads and tourism visits increase our regional parks are likely to experience more interest and pressure for commercial activities.

Wellington Riding for Disabled provide therapeutic riding activities with the help of many volunteers. They have a long term lease to build a covered riding arena at Battle Hill so they can ride under-cover year-round. The park trails provide scenic places to ride.

Paekakarikri Surf lifesaving club provide an important community service and have a long term lease to occupy an area of QEP

- What types of commercial activities do you think are appropriate in parks? For example, would you like to see more mobile coffee vans or food vendors?
- Wind farms are currently identified in the PNP as only being permitted in Akatarawa Forest. Do you think the management plan should be changed in any way in relation to wind farms?
- Do you have any interests or concerns about commercial activities in regional parks?

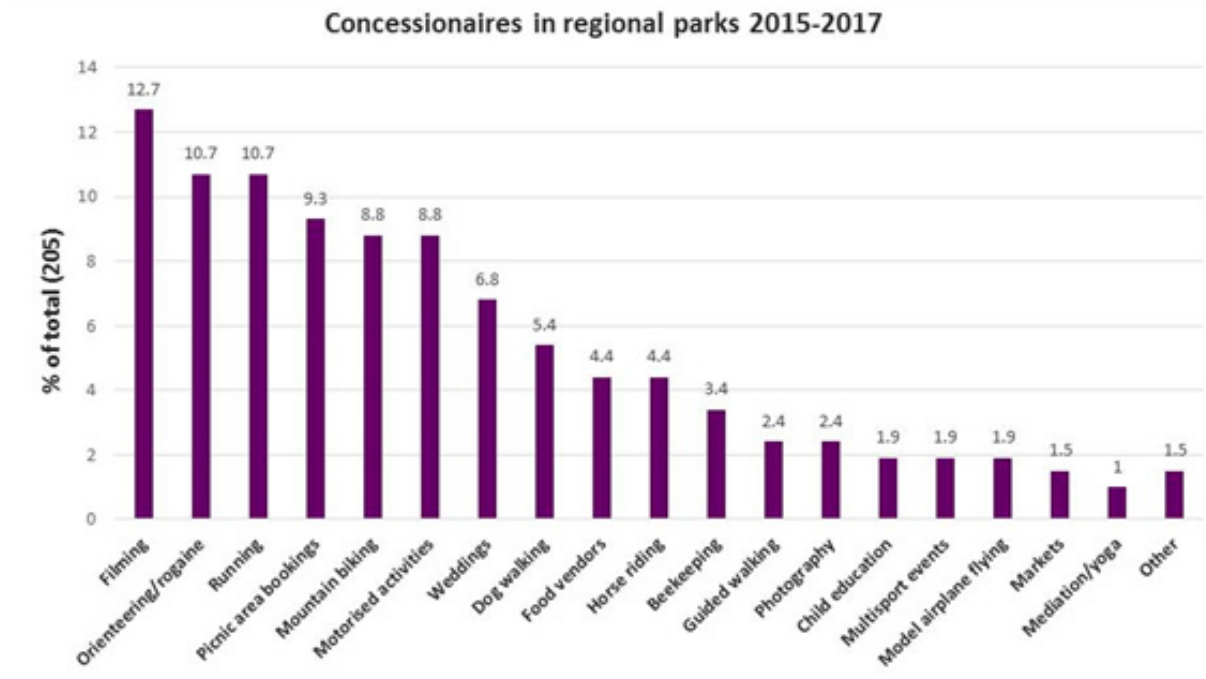
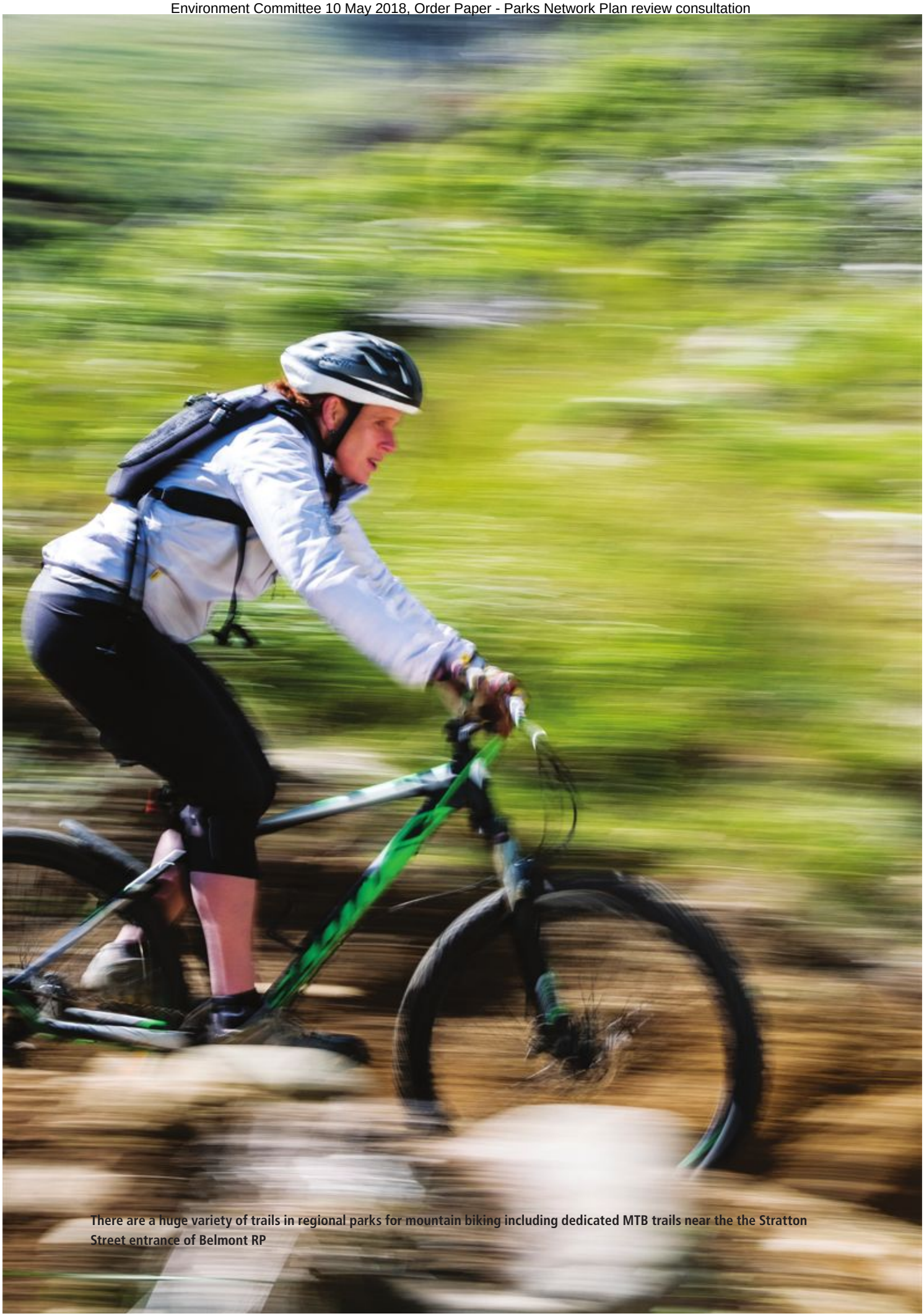


Figure 5. This graph shows the common types of concessionaires in regional parks 2015-2017



There are a huge variety of trails in regional parks for mountain biking including dedicated MTB trails near the the Stratton Street entrance of Belmont RP

SECTION 4 – RECREATION ACTIVITIES

SECTION 4 – RECREATION ACTIVITIES

Most people visit parks to undertake some sort of a recreation activity. We know from our own research that the primary activities are trail based, but for some parks particular places are the key attraction, such as the Korokoro Dam in Belmont Regional Park or Butterfly Creek in East Harbour Regional Park. Here we explore some of the key recreation activities, and we welcome feedback about any recreation activities relevant to regional parks and feedback about issues or opportunities that we can consider as we work towards developing a new management plan.

4.1 Walking, cycling, running, horse riding - tracks and trails

Trail based recreation activities are the most popular thing to do in parks. Greater Wellington's visitor research, and regional research, identifies that of these activities walking is most popular, followed by cycling/ mountain biking, jogging/ running and tramping. Dog walking is included in walking and horse riding is also popular but with far less overall participation. The trail network in regional parks totals approximately 230 kilometres of tracks and 230 kilometres of roads; in total approximately 460 kilometres of road and trail available for various recreation activities. Trails and park roads available for different types of use include:

35 km paths which are more accessible for people with limited mobility

459km walking trails

357km cycling or mountain biking trails (including roads)

160km horse riding trails

180km trail bike riding and four wheel driving roads

Regional park trails and roads are a significant recreation resource for the residents and visitors to the region.

Guided mountain biking in Belmont Regional Park as part of a Great Outdoors summer event programme.

A regional approach

Trail based activities are generally growing. The new 'Wellington Regional Trails for the Future' strategic framework (2017) identifies that the region has an active population with 78% of adults participating in sport and recreation activities which is 4% higher than the national average. Despite the region's hilly terrain 26.2% of residents cycle regularly, higher than the national average of 24.8%. The framework identifies a vision for development of the region wide network of trails as *"Connecting our people with inspiring adventures"* and details this as building on existing strength of:

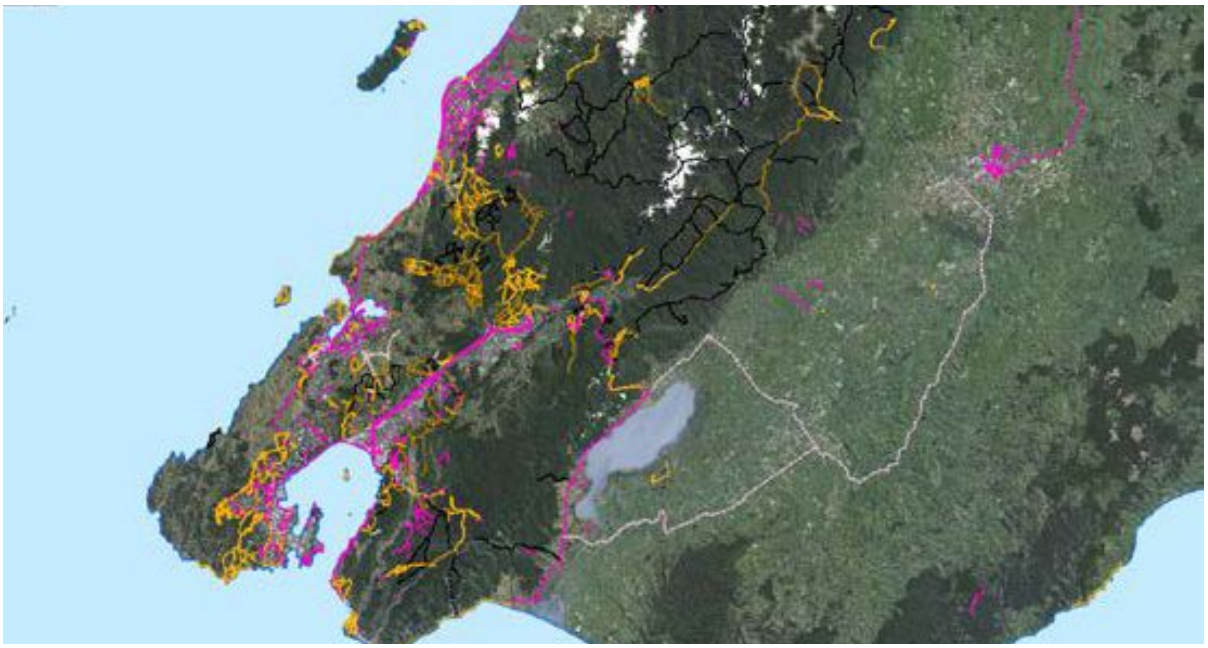
- a strong mix of trails and experiences
- trails that enable residents and visitors to explore the broader region, including outer urban areas and regional destinations
- easy access (by air, sea and car) and options for connecting trail experiences by road, rail and water.

Greater Wellington supports this vision and will work with other land managers to deliver the key actions identified in the plan. This includes development and enhancement of particular trails which have been defined as *'signature'*, *'regional'* or *'local'* category trails.

Within regional parks there is currently one signature trail; the Remutaka Cycle Trail (encompassing the Hutt River Trail and Remutaka Rail Trail), a category which acts as an attraction for visitors to the region and is a *'focal point for regional residents'*. The park network has a number of 'regional' category trails, identified as 'significant trails that form the core of the trail network and provide quality experiences for residents and visitors'.

Regional trails in Greater Wellington's parks include the Stratton Street Belmont park cluster of trails for walking, mountain biking and horse riding, the Puke Ariki trail also in Belmont, the Te Ara o Whareroa shared path in QEP, the walking trails of the East Harbour Regional Park, and the Karapoti Classic trail route in Akatarawa forest. As well as newly developed mountain bike trails around Station Drive in the Pakuratahi Forest.

The framework identifies actions such as improving trail hubs with appropriate amenity facilities, working collaboratively to close gaps in the trail network, providing interpretation along trails to reveal interesting stories, providing good information about trails, and supporting trail businesses such as bike hire, walking and cycling tours, bike friendly accommodation providers to build regional trails products which attract trail tourism visitors.



Map 3. The Regional Trails Framework map shows the wealth of 'Signature', 'Regional' and 'Local' category trails in the Wellington region.

Satisfaction with trails

In our visitor research we asked park visitors about their satisfaction with trails. From the 2017 results we know that the majority of park visitors are 'very satisfied' or 'quite' satisfied with tracks and trails. Very few report dissatisfaction (3% or less). The table below illustrates the results. However, from this we can see that there are a number of opportunities for improvement. This includes better trail connections within parks, directional signs and storytelling of key park features or history. In section 5 below we identify a number of proposals to create better trail connections and address signage and interpretation opportunities.

Park Aspects	Very Satisfied	Quite Satisfied	Not Satisfied	Could Not Rate
Tracks and trails that are easy to get to	65	25	1	9
Tracks and trails that have good connections within the parks	49	35	1	15
Tracks and trails that offer the right degree of ease or challenge for you	57	29	3	11
Direction signs within the parks	39	45	6	10
Signs that inform users about the parks, their features and/or their history	35	38	7	20

Walkers in Pakuratahi Forest

E-bikes and trails

Using an electric assist bike can overcome some of the barriers to participation in cycling, particularly in the hilly terrain of the Wellington region. Their benefits are wide ranging; they can bridge gaps between different strength and fitness levels in a group of friends of family, the extra power lightens the load if a 'tag-along' children's bike is attached at the back or for carrying gear or picnic lunch, and they can be a great way to get fit on local trails which may not have easier gradient options. There are as many different types of e-bike as there are conventional bikes.

E-bikes (electric bikes) can use all shared use trails and dedicated cycling trails in regional parks, but as with conventional bikes, trail users should 'share with care' for other trail users and for the environment (including the trail surface), wildlife and farm animals. Sharing public spaces with care is important for recreation enjoyment and environmental protection. Our Parks Bylaws provide authority for rangers to intervene if there are issues with inappropriate visitor behaviour in parks, and they are occasionally required. For use of e-bikes in parks we simply ask that the power output of the bike is in accordance with the Land Transport Act definition of a bicycle. The current definition is a power output of 300 watts, but this may change over time as e-bikes become more main stream. More highly powered e-bikes and petrol powered bikes may be used in the Akatarawa Forest where 'motorised recreation' activities such as trail bike riding and four wheel driving are permitted.

The right 'mix' of trails enhanced trail experiences

Regional parks offer a wide variety of trail and park road based recreation experiences. The graph below shows the kilometres of track in each category in total. The steeper terrain in parks such as East Harbour and Belmont has historically meant more challenging trails. We know from research and population changes that people are increasingly time poor, looking for close to home recreation opportunities, and that overall population is ageing. Baby boomer and generation X are retiring fitter and healthier than their predecessors and 'cycling' is often cited as the new 'golf' for retirees. What does this mean for the demand and supply for trail types?

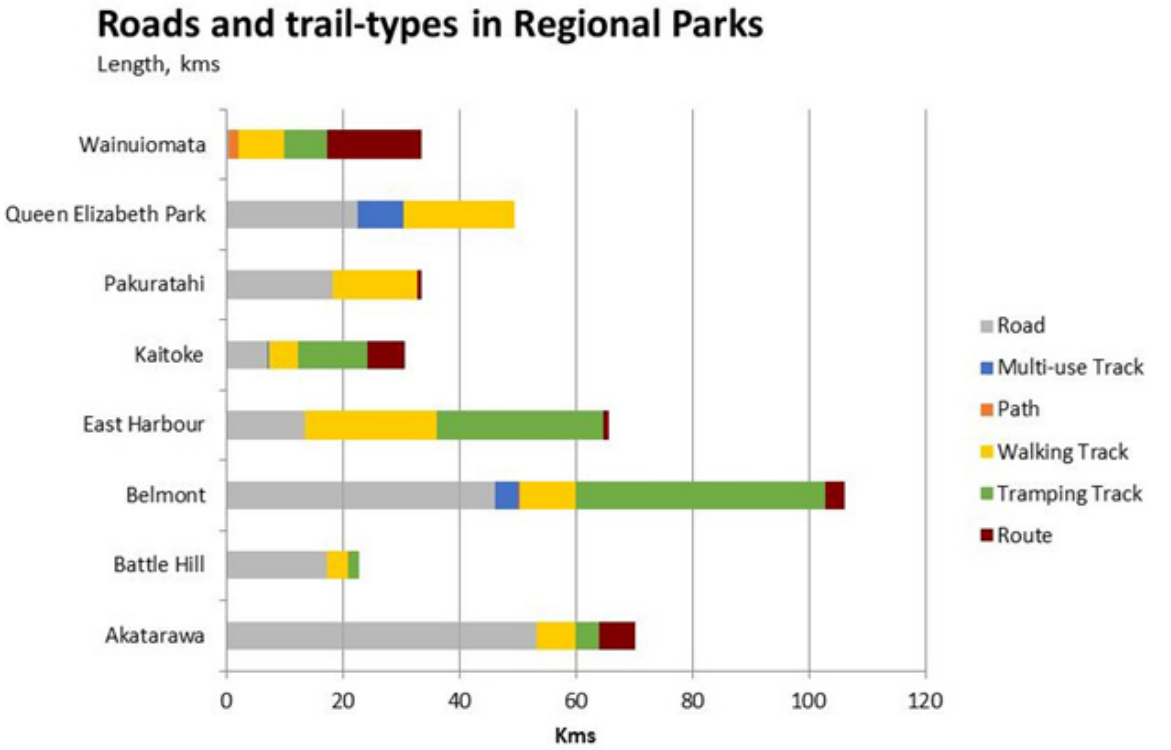


Figure 6. Tracks and roads. Belmont and East Harbour Regional Parks have a higher proportion of challenging tramping tracks due to their steep terrian. Many of the walking tracks in East Harbour are located in Parangarahu Lakes and Baring Head. Note most roads are shared by walkers and mountain bikers and some are also shared with horse riders.

The graph above illustrates the distribution of track categories as defined by the NZ standard for walking tracks SNZ 8630 as well as kilometres of road and multi-use trail in each of the regional parks. The geographic terrain of parks has a significant influence on the lengths of different track types. For example the flatter terrain of QEP means many easier grade 'walking tracks' and the steeper terrain of East Harbour Northern Forest and Belmont Regional parks means more 'tramping track' category trails up the hills.

In the graph above 'multi-use' trails are wide shared trails for horse riders, walkers and cyclists, additionally most of the roads identified above are also shared use. 'Walking' and 'Tramping' category tracks can also be shared, but most often only with walkers and cyclists. In Belmont and Pakuratahi Forest the roads are farm/forestry roads such as Old Coach Road, Goat Rock, Back Road and Belmont Road which provide some longer distance cycling, walking and running opportunities. The steep terrain of these parks means that there are many challenging trails but far less easy trails which can limit access opportunities for many people.

To create easier grade walking tracks in the Northern Forest of East Harbour or in much of Belmont Regional Park requires significant effort to realign existing trails or retire steep trails from use and create new ones which climb more gradually. Trail realignment will generally mean more use and enjoyment for more people, and it can also have environmental benefits. A gentler trail gradient usually means less water run-off and erosion of the trail surface and surrounding areas, and less maintenance cost. It may also result in some trail user 'displacement', with people who prefer the greater challenge shifting their use to other trails, but there is a rich supply of challenging trails.

Creating new trails may be also be appropriate in some areas provided possible impacts can be minimised, well managed or mitigated. Belmont and East Harbour regional parks are visible steep and hilly landmarks and the closest large regional parks to the Wellington city so offer the greatest opportunities for greater use and enjoyment as well as trail upgrades. See Section 5 proposals for details

Mountain biking in the Stratton Street area of Belmont Regional Park. This area was previosly plantation pine forest and is now gradually regenerating to native bush. The Belmont Mountain Bike Association (BAMBA) have built and are maintaining trails here.

Possible future directions for trails

The following directions are intended to support trail based recreation over the next ten years (the approximate time frame for the new management plan). We propose them here as overall directions for trail development and management:

- Continue to maintain the tracks to national standards (as set out in the NZS Handbook of Tracks and Outdoor Visitor Structures). Apply trail difficulty ratings to inform trail users about the types opportunities available.
- Maintain and further develop easy and accessible trails such as short walks, easy category MTB tracks and longer trails which have gentle gradients
- Undertake trail realignments and trail gradient upgrades for environment protection and visitor safety and enjoyment purposes. Some tracks have steep gradients which contribute to erosion and less enjoyable trail experiences.
- Further develop existing trails as shared use where impacts can be minimised and where shared use is appropriate.
- Develop new trails where demand is apparent, key features can be highlighted for educational or tourism purposes, or where other trails are closed, and where impacts can be appropriately managed (or are reduced by formal trail development.
- Further develop trail hub facilities for MTB at locations such as Stratton Street, Belmont, Tunnel Gully, Pakuratahi Forest. Facilities could include bike wash down, skills areas, shelter and picnic facilities, larger parking areas etc.
- Develop mountain bike skills trails where demand is apparent and impacts can be minimised
- Improve directional signage for trails. The need for this is identified through our annual visitor feedback programme.
- Develop more story telling (heritage interpretation) about significant features or stories along trails
- When new trails are developed or significant redevelopments take place they will have both local mana whenua and English language names (current PNP policy) or a single mana whenua name if this is more appropriate.
- As needed, develop agreements for trail development and maintenance work with local clubs such as Memorandum's of understanding (MOU's). For example, an effective MOU and track protocol is in place with the Akatarawa Recreation Access Committee (ARAC)
- Continuing innovations in trail infrastructure such as keyless entry electronic locks and cycle friendly access barriers
- Support e-bike use with charging points in appropriate locations if demand is apparent (for example with users bringing own charger)
- Where practicable, develop better trail and public transport connections to parks and trail connections to nearby parks managed by Territorial Authorities and DOC to create better connected 'local' trail networks.
- Continued gathering of data about trail uses and preferences to inform planning and management of trails. This includes using existing data sources such as devices and applications, which collect and store data about trail use.

A 'trail assessment criteria' is likely to be included in the new management plan which includes an outline of key considerations for new trail proposals or significant changes to existing trails, such as a change to shared use instead of single use. The criteria will also consider the significance of natural and cultural heritage values.

- Do you support the possible future directions outlined above for Greater Wellington's park trails?
- What other changes or improvements should be made?
- Are particular trail facilities or services required?
- What is your favourite regional park trail and why?
- Do you have any other comments about trails?

4.2 Camping in regional parks

The current management focus of camping in regional parks is catering for growth. With increased international and domestic tourism has come increased demand for camping in our three regional park campgrounds; Kaitoke, Battle Hill and Dry Creek in Belmont Regional Park. Camping is now a year-round activity for international visitors. For campers coming from within the region demand intensifies during holidays and periods of fine and warm weather.

Battle Hill Farm Forest Park campground is consistently at capacity (80 campers) over the summer period, with international visitors (in particular Europeans) in high numbers and during summer as well as travelling out of their traditional shoulder season months. In 2012/13 there were approximately 2,586 camper nights, which increased to 4,580 in 2015/16 and significant increase is apparent again with the warm summer conditions in 2017/18. Essential supporting infrastructure including water supplies and toilet facilities has required ongoing investment to handle this growing demand.

At **Kaitoke Regional Park** in the 2016 summer camping season there was a new record high number of campers and each year since then numbers have increased further. In this season there were up to 500 campers a night and even with poor summer weather, Kaitoke still had its second highest over camping revenue in the 2016/17 financial year. To illustrate growth, there were approximately 13,000 camper nights in 2012/13 and by 2015/16 the number had grown to 28,026 camper nights. The 2017/18 season is on track to exceed previous record numbers. Camping revenue has been reinvested in to camping facilities in parks such as bbq's and a kitchen shelter on the Top Terrace and the introduction of powered campsites for campervans.

In **Belmont Regional Park** at the Dry Creek campground, budget campervans hired by Europeans are the dominant camper type, using the campground year round and particularly from November to April. A new toilet block and a "summer" campsite further away from the traffic noise of State Highway two were key enhancements undertaken here. Camper numbers have also steadily increased at Dry Creek.

More people using campgrounds means increased costs of servicing campgrounds and maintaining them in good condition. To support demand this has meant:

- Increased Park Ranger visits to tidy sites, educate visitors and collect fees
- Greater use of contractors to undertake some of the daily tasks such as cleaning toilet blocks
- More materials used (e.g, toilet paper and cleaning products)
- Development of new facilities on the Top Terrace at Kaitoke and toilets at Dry Creek

The need to increase camping night fees to sustain the higher level of servicing (refer to the fee change proposal in section 5 below).

We know from visitor feedback that many people are using smart phone applications such as ***CamperMate*** to find Greater Wellington's campgrounds. We believe they are popular due to their low cost, accessibility, security, the surrounding high quality natural environment and the standard of facilities and service offered. All our campgrounds have streams or rivers associated with them and are within attractive park settings.

In our campgrounds, there is high demand for recharging battery powered devices. At present this facility is only available at the Kaitoke campground but at other campgrounds many campers bring their own power back up batteries and portable solar panels. They also bring solar or mini gas powered portable showers. This makes camping experiences comfortable and keeps our campgrounds as 'back to nature camping' and more of an adventure. We propose to maintain these basic levels of service with upgrades for environmental protection and to accommodate increased demand.

Wilderness camping

The PNP identifies that wilderness camping is permitted in parts of Akatarawa and Pakuratahi Forests, East Harbour and Kaitoke Regional Park and the Wainuiomata Recreation area, no closer than 500m from any road entrances. To lessen possible impacts on the environment and the recreation enjoyment of others, we propose that the current rules be expanded to be 1km from any road, track or amenity area in parks, and for a period of less than seven days.

- Have you visited one of Greater Wellington's campgrounds? If so what did you like best?
- What facilities or services do you think are appropriate within our campgrounds?
- What other changes or improvements should be made?

Dog walking

Walking dogs in parks is one of the more popular recreation activities in regional parks and is permitted in all parks except Battle Hill and Baring Head, and on the farmed areas of QEP and Belmont. The current PNP identifies that visitors bringing dogs into parks must ensure that dog activities does not conflict with park values, other activities or the visitor experience do not impact the enjoyment of others and that dogs are kept under control at all times. Park visitors bringing dogs into parks are asked to collect their dog's poo and deposit it in bins provided or take it home with them. The current PNP deliberately does not identify which areas of parks are 'on' and 'off-leash' so that park managers can change arrangements as local needs require.

Dogs not kept under control in parks can have negative effects on other people and wildlife. They can:

- Be harmful to birds and bird nesting, penguins in coastal areas. They are a particular hazard to kiwi where they are present in parks
- Interfere with other trail users enjoyment such as walkers, cyclists, runners and horse riders
- Mean that other visitors who are afraid of dogs and have negative experiences no longer visit regional parks or particular areas of parks
- Compromise individual park values and farm management requirements where grazing activities occur.

Responsible dog walker behaviour is critical to ensuring this activity takes place in a harmonious manner for the enjoyment of all park visitors. City and district councils are responsible for managing dangerous dogs and seizing dangerous dogs under the Dog Control Act 1996. Some councils also provide recreation facilities for dog walkers and their dogs such as agility equipment and off-leash areas.

Commercial dog operators also undertake dog walking activities in parks and may be seen with larger groups of dogs. This activity is managed under a concession and has its own unique conditions mainly around the areas where the activity can take place.

For the enjoyment of others dog walkers are encourage to pick up their dogs poo. Bins are provided in some parks.

- Do you have any concerns about people walking dogs for recreation or commercial purposes in regional parks?
- Can you tell us anything that you think should change about dog walking activities in parks?

4.3 Hunting

Hunting by permit or annual ballot is permitted in a number of parks including Pakuratahi and Akatarawa Forests, Kaitoke Regional Park, Hutt Water Collection Area, the northern forest of East Harbour Regional Park and Wainuiomata Water Collection Area. These areas currently provide close to home recreational hunting opportunities. In some areas access is restricted to certain times of the year to limit potential conflicts with other recreational activities. Most of our regional parks are also directly or indirectly connected to large areas of DOC managed protected area park such as the Remutaka and Tararua Forest Parks where recreational hunting activities can take place year round.

Recreational hunting is permitted in parks primarily for recreational enjoyment, but also to help reduce the numbers of non-native animals such as deer and goat which heavily browse native vegetation. Greater Wellington also employs professional hunters to reduce non-native animal numbers.

No changes to current recreational hunting access are planned at present but we welcome feedback about this.

- What do you think about hunting in regional parks?
- Should Greater Wellington make any changes to current recreational hunting access?

4.4 Fishing

Sports fishing is a popular activity in parks containing rivers and streams that support larger fish such as the Wainuiomata River at Baring Head, the Hutt River in Kaitoke Regional Park and the Pakuratahi River in the Pakuratahi Forest. Fish and Game NZ (F&G) manages the trout and other introduced fish species such as perch. A licence from Fish and Game is required to fish for these species.

Our current management plan does not identify rules about whitebait fishing and we are sometimes asked about this. DOC manages the whitebait fishery via the Whitebait Fishing Regulations 1994 and identifies that the activity is only permitted between 15 August and 30 November annually. DOC information about whitebait indicates that four of the five species of whitebait are in decline nationally, and that these species all spawn in streamside vegetation. They suggest that to support fishery health streams should be kept free from pest plants and fish and barriers to fish movement should be avoided or removed. Improving native fish passage in streams is a key focus of the freshwater fish programme in Greater Wellington. Whitebait is harvesting generally takes place from sections of waterways subject to tidal influences which are outside park boundaries

Long fin eels and short finned freshwater eels (or 'tuna' in Te Reo Māori) have been recorded in several waterways in regional parks. Ministry of Primary Industries Fishing Regulations identify rules for fishing feels, including a daily limit of 6 eels per person fishing. Eels migrate up streams to find suitable adult habitat and after many years (15-30 years for shortfins, 25 years for longfins, and sometimes up to 80 years) they migrate to the Pacific Ocean to breed and die. They face the same pressures on habitat as whitebait, and for this reason and to support overall population health, fishing for eels in regional parks is not encouraged.

- What do you think about hunting or fishing in regional parks?
- Are facilities supporting fishing activities adequate in regional parks?

4.5 Nature play and time in the wild

Nature is a great place for children to grow and learn. In natural environments, children use natural materials and objects for long periods of imaginary play. Imaginary play has been shown to help children develop social and cognitive skills. This is well documented in research relating to the world healthy parks, healthy people global movement.

While formal education teaches children about global threats to the environment such as climate change, many children are less aware of where the food they consume comes from, and as the Department of Conservation publication 'Benefits of connecting children with nature' (2011) indicates, 'their physical contact, their intimacy with nature, is fading'. Spending time in the wild with children and enjoying nature play activities is also know to alleviate 'nature-deficit disorder', a condition identified by Richard Louv in his book the Last Child in the Woods (2005, Atlantic books, London), as the result of too much time indoors and in front of electronic devices. Other research indicates that children who don't have many nature based experiences such as camping or exploring and enjoying the bush, are less likely to do these activities or find them more difficult later in life as adults.

According to another natural heritage expert, David Attenborough, "No one will protect what they don't care about; and no one will care about what they have never experienced". The benefits of people making connecting with nature and spending time outdoors in natural settings are numerous as identified in the People and Places section above. If children and adults are not experiencing nature, they are less likely to see reasons to protect it.

There are both physical and mental health and well-being benefits from regular contact with nature and informal play opportunities. In recognition of this more recently urban councils have started creating nature 'play spaces' in urban areas as an alternative to factory build play equipment 'playgrounds'.

Nature play in regional parks

Our greatest nature play spaces are possibly rivers and streams but in all parks there are trees and rocks to climb and other special features such as the red tractor and rope swing at Battle Hill. Greater Wellington recognises the importance of attracting families and children into the outdoors to try new activities. The summer Great Outdoors events programme is a significant incentive for families to visit park with a range of family friendly events on offer such as farm day at Battle Hill, farm tours at QEP, stream side activities such as fish monitoring and other family friendly events.

Play-friendly places don't have to be built structures, they can be big grassy areas where visitors bring their own equipment such as model aeroplanes or battery powered children's cars and bikes. Battle Hill and Kaitoke Regional Parks are long standing attractions in summer for families to camp and explore.

We are interested in feedback about the best nature play opportunities in regional parks which might be particular trees to climb, boulders, swimming holes in streams or rivers or other natural features. This is so that we can preserve and protect these places for many future adventures

Using technology in parks is fun for those participating and can be fun for those watching too. A range of battery powered devices are emerging and being used in parks.

Time in the wild or immersed in a recreation activity

Fishing, flying model aeroplanes and drones, mountain bike and equestrian events are all fun and healthy activities which contribute to similar beneficial health and wellbeing and social connection outcomes.

Adults need enticements to get into the great outdoors too and unsurprisingly the track and trail related activities – walking, running, cycling and dog walking are the most popular active recreation activity for adults according to the Sport NZ, Sport and Active Recreation survey in 2013-14. This is supported by Greater Wellington's own visitor research surveys too (see our 'External Influences on parks' document). Overseas and in urban parks trail activities are sometimes supported by the addition of outdoor fitness equipment next to trails for stretching and strength exercises. In regional parks our longer trails and extensive network of connected tracks are ideal for long distance running, orienteering or regaining. Greater participation in healthy outdoor recreation activities supports adult mental and physical health and reduces public health costs associated with illness from inactivity.

Flying model planes and drones is an increasingly popular activity in some regional parks.

- How do you think we can enhance our nature play opportunities in parks?
- Where should we locate any enhancement, or should we just provide more information about what we have?

4.6 Recreation information

Digital information is the norm for finding out about parks and planning trips and activities and finding our way with GPS. At present most of our story telling in parks is conducted face to face via ranger talks and walks and via traditional interpretation signs and through ranger talks and the Greater Wellington promotions such as the summer Great Outdoors events programme.

Signs stand the test of time and weather, are economical to produce, and are low tech which means you can visit and learn whilst having a break from technology and digital screens. But story telling through digital media is an opportunity Greater Wellington wants to explore more. For example, we could use augmented reality to bring the lighthouse keeper back to life in the generator building 'power house' at Baring Head, we could project seasonal farming activities in farm buildings at Battle Hill or play motion sensed audio in key historic places in parks.

The possibilities are endless and limited most by budget and time than imagination. Here are a few:

- You-tube clips and Google mapping trails to create 'virtual hikes' is also a good way to explore a place before you got there
- Wearable fitness related technology such as 'fit bits' and 'Strava' peak and distance challenges help motivate people to get up off the couch and get active in parks, and in some applications, also see which routes others have used and participate in fitness challenges.
- User generated content like Open Street Maps, personal blogs and user reviews on platforms such as Trip Advisor and Camper mate and Wiki Camps are the most commonly used crowd sourced information apps for parks and help our visitors find parks and activities
- Social media such as stunning Instagram snaps highlights the most beautiful aspects of parks and inspires visits.

No tech

Technology and personal devices are part of our way of life now and many people acknowledge that they spent too much time in front of a screen. To ward off 'nature deficit disorder' visiting a park and only using your device as a camera, torch or for emergencies is the sort of nature break that is most beneficial for health and well-being.

- What technology do you like to use in parks?
- How do you prefer to find out about things to do in parks?
- Do you have any comments about use of technology in parks?
- Do you prefer brochures and maps over electronic information?
- How do you 'connect' to Parks?

Battle Hill Farm Forest Park is very popular for horse riding with good float parking and forest and farm trails to ride on.

SECTION 5 – PARK SPECIFIC PROPOSALS

SECTION 5 - PARK SPECIFIC PROPOSALS

The purpose of this section is to identify key proposals or changes. Proposals requiring significant funding are identified in the proposed new 10 Year Plan. Other proposals identified below are expected to be funded via operational funds, fees from concessionaires, friends and volunteer efforts ('community capital') and donations and grant funds. Suggestions for other proposals and feedback on these proposals is welcomed.

5.1 PARK-WIDE PROPOSALS

Friends and volunteers

Parks wouldn't be the great places they are without the support of friends groups and volunteers. We will continue to work with and support volunteer groups to deliver conservation and recreation work in parks. With an ageing population and more people retiring and seeking active, meaningful volunteer work in the region, we will work towards improving our systems and support for volunteers so that opportunities are easily accessed and that mutual benefits are optimised.

Recreation information

Work is currently underway to develop a new Greater Wellington website. People seeking recreation information about parks is a key reason for visiting the site and the information presented will be significantly improved with the new website. Services such as obtaining hunting permits will also be made easier via an online tool.

Story telling

A new focus will be a greater emphasis on story telling using a variety of interpretation media including ranger talks and walks, signs, digital media delivered via mobile devices and online options. An overall parks interpretation framework will be developed in liaison with mana whenua to identify key sites and stories in liaison with our mana whenua partners. We propose that story telling will take place in a variety of different ways using different story telling methods including ranger and concessionaire talks, traditional panels, online and digital media, art, sculpture and other installations which may be temporary or permanent, events and in other innovative ways.

Protecting and enhancing freshwater

To implement Greater Wellington's Proposed Natural Resource Plan rules, all category one and two streams will be fenced to exclude stock and other wetlands, streams and stream tributaries in parks will be fenced as resources allow with riparian revegetation activities taking place to improve biodiversity. Barriers to fish passage will be progressively removed or reduced. As regional Whaitua processes are worked through to implementation stage, additional actions relating to improving freshwater quality may arise.

Enhancing key sites for tourism day visits

Our regional parks are special places, often very well known to their local communities but less well known to others. A new focus will be supporting and enhancing key sites for tourism visits such as the Baring Head Lighthouse complex, Kaitoke Regional Park for Lord of the Rings filming pilgrimages, and the Remutaka Rail Trail as part of New Zealand's Great Rides Network. At key sites we will develop interpretation to reveal stories, improve existing facilities and add new supporting services or facilities where demand warrants it.

Adapting to climate change

Climate change is upon us and this means impacts on our facilities from events such as regular flooding, coastal erosion or extended dry spells and increased risk of fire. Through our parks operational programme, we will work to improve the resilience of our assets, relocate assets and make other changes required to adapt to a highly variable climate. This includes water supplies within parks, pest plant and animal works delivered through the KNE programme, and considering whether to create more extensive fire breaks or planting 'green fire breaks' to better protect parks and neighbouring communities from fire.

Fees for services and facility use

A lot goes on behind the scenes to support happy camping experiences. Growth in regional tourism means that camping has become a year round activity instead of the summer season activity it has predominantly been in the past, and in many campgrounds visitor numbers have more than doubled over the last five years.

Where we charge fees for facilities and services such as campgrounds, venue hire, event fees and concession fees they are generally low but consider broader market rates. Our campground fees have not increased for several years, but demand has increased as has the cost of servicing our campgrounds for more campers and over a longer camping season. Facilities and services in campgrounds, to make sure they are safe and meet visitor expectations, include grass mowing, ranger presence, treated drinking water, sinks, covered seating, power sockets, rubbish and recycling, cleaning toilets, free of charge electric BBQ's, road and path maintenance, drainage and security. There are also activities and events as part of the summer events programme. New facilities are also being built or are planned to support camping in regional parks.

To better cover campground servicing costs increases to campground fees proposed. These changes were included in the supporting for Greater Wellington's ten year plan which was publicly consulted in March-April 2018. Unpowered campsite fees are proposed to increase from $6 to $8 per night for adults and from $3 to $4 per night for children. Powered campsite fees are proposed to increase from $12 to $16 per night for adults and from $6 to $12 for children. Camping remains free of charge for children under five years of age. This review will bring fees in line with similar campgrounds managed by DOC. Fee changes are proposed to come into effect from 1 July 2018, after approval of Greater Wellington's long term plan. The current fee schedule is published on the Greater Wellington website: http://www.gwrc.govt.nz/concessions-and-permits/

5.2 AKATARAWA FOREST

An amendment was made to the PNP in September 2016 to update and replace the motorised recreation trail map for the Akatarawa Forest. In this plan amendment, the revised trail network saw areas that are environmentally sensitive excluded from motorised recreation trail access (Whakatekei and Martin's Creek wetlands) and other trails which are regularly used recognised as permitted trails for use.

Akatarawa Forest is the primary location for activities such as four wheel driving and trail bike riding. Greater Wellington works closely with ARAC (the Akatarawa Recreation Access Committee) to manage the network of tracks and roads to ensure that impacts are minimised. The forest also has plantation trees for commercial harvesting. The forest is held for future water collection purposes, recreation and forestry.

	Proposal	Estimated time frame Short 1-3 years Medium 4-10 years Long 10+ years
1	A possible radio repeater is proposed for Greater Wellington, 4WD and trail bike club use in the park (unless new transmitter devices negate the need for it). Improved communication coverage in the in the park will assist with incident response and overall public safety	Short
2	Light Utility Vehicles (LUVs) also known as side by sides are now commonly used in the forest. For management purposes these vehicles under a certain width will be classified as a quad bike. Other motorised recreational vehicles such as go karts and larger LUVs will also be classified in the same category as 4WD's for access and management purposes.	Ongoing
3	For environment protection purposes the following changes are proposed to motorised recreation access tracks: All types of vehicles restricted to the "Causeway" track in the Whakatikei wetland area. The Whakatikei catchment above Orange Hut and Martins River wetland north of the Rock Garden will be closed to vehicle access due to their ecological importance.	Short

5.3 BATTLE HILL FARM FOREST PARK

Battle Hill is popular for events, equestrian activities and camping. The Transmission Gully motorway is under construction through the park. An underpass has been completed and trail access has been retained to the plantation forest trails in the eastern part of the park. When the new motorway opens, motorists will pass through approximately 1km of park, which means that Battle Hill will become a much more highly visible and well-known regional park. This new high visibility will provide Greater Wellington with a number of opportunities such as showcasing best practice in sustainable land management with native and exotic vegetation hill side plantings (undertaken by the Transmission Gully motorway project). Other awareness raising opportunities include signage.

The Wellington Group of Riding for Disabled moved their operations to the park in 2016 and have a long term agreement to construct a covered riding arena. Their activities have become a feature of the park providing opportunities for local volunteering, and they have fitted in well with existing equestrian activities and groups based at the park.

A number of proposals for future park directions are identified below.

	Proposal	Estimated time frame Short 1-3 years Medium 4-10 years Long 10+ years
4	Transmission Gully Motorway fringes Battle Hill: Optimise awareness of Battle Hill park with naming signage visible to motorway users e.g. hill side signage or symbolic public art work (if external funds or sponsorships become available) Demonstration of good land management through well-planned plantings	Short
5	Develop a landscape master plan blue print for the Battle Hill entry precinct encompassing woolshed, homestead, ranger's residence, and extending to campground and ponds area. This aim of this plan is to improve the overall look and feel of this busy area for park visitors, operational farm management, event use and park stakeholder activities	Short -Medium
6	Develop/revise and then implement a Farm Environment Plan for the park focussed on short, medium and long term actions and investment to deliver on environmental outcomes. This plan will consider directions of the current Sustainable Land Use Plan, Proposed Natural Resources Plan, Whaitua Implementation Programme, Porirua Harbour Strategy and Action Plan and other relevant documents or directions.	Development : Short Implementation: Medium

5.4 BELMONT REGIONAL PARK

The Transmission Gully Motorway also passes through Belmont Regional Park and during the construction period access in an east-west direction across the park has been restricted. As the motorway nears completion access will be restored. The same opportunity exists as at Battle Hill to raise awareness of this park through signage and showcase best practice in sustainable land management. Various other opportunities and proposals are proposed below.

	Proposal	Estimated time frame Short 1-3 years Medium 4-10 years Long 10+ years
7	Transmission Gully motorway fringes: Land and waterway retirement and large scale plantings Park signage and/ or interpretation such as public art work or sculpture (if external funds or sponsorship available). Track enhancements to support reinstated east-west trails	Short – Medium
8	Trails: Investigate further develop shared use (walking and mountain bike) trails to create more circuit rides, easier and intermediate grade trails Develop other trail entry hubs in the park Upgrade trail gradients and surfaces to an easier standard in selected locations to make them accessible to a wider range of users Enhance the Puke Ariki traverse track and promote to be a more significant trail attraction for Wellington, for example with sections of trail upgrade, signage, trail head facilities or trail shelters and interpretation Promote 'share with care' trail user behaviour on all shared trails Further story telling interpretation at key locations in the park to enhance visitor experiences Further minor enhancement to the Korokoro Stream track to support shared use	Short-Medium
9	Develop a conservation management plan for WW2 munition bunkers considering interpretation opportunities and as well as adaptive re-use possibilities.	Medium
10	Undertake further stream and waterway fencing and retirement of grazed areas throughout the park to support passive and active native vegetation restoration	Ongoing
11	Develop and then implement a new 'Farm Environment Plan' for the park focussed on short, medium and long term actions and investments to deliver key environmental outcomes (such as freshwater quality). The new plan will consider directions of the current Sustainable Land Use Plan, Proposed Natural Resources Plan, Whaitua Implementation Programme, Porirua Harbour Strategy and Action Plan, and other relevant documents and directions.	Develop : Short Implement: Medium
12	Develop a landscape master plan for the Stratton Street park entrance to improve access and circulation and overall amenity.	Short
13	Upgrade the Cornish Street park entrance as access to land owned by others becomes available or other opportunities present	Medium
14	Minor upgrades to Old Coach Road to enable the road to facilitate emergency access	Short

5.5 EAST HARBOUR REGIONAL PARK

East Harbour Regional Park has three distinct parts, each with unique features:

Northern Forest – comprises the hills behind Days Bay through to Eastbourne which form part of the scenic backdrop to Wellington Harbour and city. Many of the tracks in this part of the park have been upgraded to minimise environmental effects from runoff and erosion, and improve accessibility. Further opportunities for track realignments exist as well as heritage interpretation of significant features.

Parangarahu Lakes – accessed by walking or cycling along the Pencarrow Coast Road. The Lakes are managed by Greater Wellington in partnership with mana whenua, through the Port Nicholson Block Settlement Trust. A co-management plan was developed in 2015.

Baring Head – most easily accessed from the Wainuiomata Coast Road or for a longer walk or ride, accessed via the Pencarrow Coast Road, Baring Head has an active Friends group undertaking weeding, restoration plantings, monitoring and pest animal reduction works. The Friends are also leading fundraising to redevelop the lighthouse complex which includes two former light keepers cottages and a generator building which will become a day visitor shelter.

	Proposal	Estimated time frame Short 1-3 years Medium 4-10 years Long 10+ years
	Northern Forest	
15	Trails: Manage shared use of the Rata Ridge track and evaluate a realignment to reduce environmental impacts. A less steep and more useable and enjoyable trail experience is required which is away from the current steep fire break trail (and fragmented) down to Stanley Street. Some hardening of the trail surface may be required. Minor trail upgrades to improve drainage and accessibility	Short
16	Recreational hunting: Maintenance of limited ballot hunting permitted annually in the 'roar' between April and May in the eastern hills to support the reduction in pest animal numbers and help to protect important ecological values. This limited hunting ballot period recognises community concerns about public safety. No further extension to this period is proposed because nearby DOC and Greater Wellington managed forests offer large areas for hunting all year. Continued use of professional hunters to reduce non-native animal numbers in the park as part of the KNE programme delivery.	Ongoing
	Baring Head	
17	A new pedestrian bridge over the Wainuiomata River, towards the river mouth to create safer access to the park from coastal car park. The installation of a pedestrian bridge will create an easy circuit walking and riding trail from the current bridge and park entrance area.	Medium
18	Support the Friends of Baring Head and continue works until completion on the lighthouse complex cottages (for booked accommodation) and outbuildings including installation of new services, building repair works, heritage interpretation, a new lookout and children's discovery trail. Details of the overall restoration project are available on the website	Short-Medium
19	Heritage interpretation throughout Baring Head including signage	Short
20	If the Remutaka Cycle Trail extension is developed through Baring Head in future, undertake trail upgrades and provide interpretation experience general enhancements for trail users.	Long
	Parangarahu Lakes	
21	For all management activities, continue to work closely with the Port Nicholson Block Settlement Trust (PNBST/ Taranki Whanui) as part of the Parangarahu Lakes co management arrangement.	Ongoing

22	Create a low level track to connect to existing trails and create a circuit	Medium
23	Install a sealed vault toilet at an appropriate location	Medium
24	Develop bird hide lookouts with interpretation	Medium
25	Develop heritage interpretation to reveal interesting aspects of the Lakes including face to face storytelling, events, signage, digital and other media such as art or sculptural works.	Short

5.6 PAKURATAHI FOREST

The main focal points for this forest are the Tunnel Gully picnic and entrance area and the historic Remutaka Rail Trail which is one of the most interesting and enjoyable parts of the Remutaka Cycle Trail. Further improvements to enhance trail users experiences are proposed such as heritage interpretation and works to preserve and protect heritage assets along the trail such as culverts and bridges. The forest also has plantation trees for commercial harvesting.

	Proposal	Estimated time frame Short 1-3 years Medium 4-10 years Long 10+ years
26	Toilet upgrade at the Tunnel Gully upper picnic area	Short
27	Maintenance and enhancement of the mountain bike trail network around Station Drive area of the forest. This includes trail upgrades, new trails, signs and trail realignments for environmental protection purposes.	Short
28	Investigate developing a new park entrance at the end of 'Quarry road' in Mangaroa including parking in liaison with Upper Hutt City Council and PF Olsen licence holders.	Short-Medium
29	An area of park is currently licenced for glider club activities but it is possible that glider club activities may not continue in future. If this area becomes available for other uses uch as: • UAV/ drone use such as racing • Mountain bike skills development tracks • Motorbike club track or motorcycle club use • Gun club shooting range activities • Equestrian club use Feedback is welcomed about these or other possible uses should this area become available.	Short-Medium
30	Remutaka cycle trail upgrades to enhance the visitor experience including interpretation, facilities, heritage asset works. Manage (some removal) overgrown pine trees near the rail trail which may impact heritage features or pose safety risks. Replant with native species where appropriate.	Short-medium
31	Continue to maintain and preserve significant rail trail heritage assets.	Short

5.7 KAITOKE REGIONAL PARK

The main activities at Kaitoke are camping related and bushwalks. More camping by residents and visitors has put pressure on camping facilities so facility upgrades to support demand are required. Rivendell remains a very popular location for Lord of the Rings fans visiting independently and on organised tours. Kaitoke Regional Park is also important to Wellingtons water supply with the treatment plant and water storage lakes located in the park.

	Proposal	Estimated time frame Short 1-3 years Medium 4-10 years Long 10+ years
32	New camping facility building on the top terrace including toilets, BBQs, bench/ sinks, picnic tables and power for charging electronic devices.	Short
33	Upgraded swing-bridge over the Hutt River to provide for two-way pedestrian access, buggies, wheelchairs and bicycles.	Short
34	Develop a landscape plan for the Te Marua area of as identified in the park to identify connecting tracks, amenity plantings and other conservation works.	Medium
35	If currently leased AgResearch land becomes available for park related use in future, develop connecting trails to Pakuratahi Forest and the Remutaka Rail Trail.	Medium

5.8 QUEEN ELIZABETH PARK

QEP is a large park with many different recreation and conservation related activities taking place. Areas of the park not required for recreation purposes are currently managed with sheep and cattle stock grazing, and these areas are reduced as resources for native plant revegetation and maintenance become available. In 2016 a new trans-park shared path 'Te Ara o Whareroa' was opened connecting the suburbs of Raumati South and Paekakariki. It was developed with funds from the NZTA Kapiti Expressway and Transmission Gully Motorway projects. Daily commuter use and general recreation use of this trail is significant.

In 2017 the Maclean Trust made a generous donation which has enabled environmental restoration works to commence in the north east corner of the park. Also in 2017 a new entrance hub building at the main McKay's Crossing was opened as the focal point for this as part of the park. Further landscaping and heritage interpretation works are proposed to complete this development which was identified in the heritage framework for the park. A key challenge in this park is responding to the effects of climate change which include ongoing significant coastal erosion.

	Proposal	Estimated time frame Short 1-3 years Medium 4-10 years Long 10+ years
36	Develop a climate change response plan for the coastal areas, then implement works to minimise the effects of climate change on effected park assets. Impacts include coastal retreat, storm damage, more frequent flooding and periods of drought and extreme winds. Works will for example include strengthening, removing or relocating inland facilities such as roads, trails, toilets and parking areas. Facilities most under threat from coastal erosion are currently in the Wellington road, Paekakariki entrance area and the northern Coastal Track between Whareroa Stream and Raumati South. This section of the Coastal track is already closed due to cumulative and ongoing damage from storm events. Because of the dynamic nature of the coastal environment, damage remediation works in future may also involve the vehicle bridge at the mouth of Whareroa stream.	Immediate and ongoing
37	Develop additional circuit trails to improve access in the northern area of the park beside streams, wetlands or through regenerating bush areas.	Short-medium
38	Continue to implement the QEP Heritage Framework themes to interpret and reveal interesting features and reveal more stories of this park	Short

39	In liaison with mana whenua and park stakeholders, develop an overall park story telling framework and priority action plan for implementation (as resources become available)	Short
41	Develop a Park Environment Plan which includes the grazed areas of the park focussed on short, medium and long term actions and investment to deliver environmental outcomes (in particular of improved habitat, biodiversity and water quality). The plan will encompass an overall landscape restoration/ master plan to identify areas of park for progressive native vegetation restoration. This component of the plan is intended to support grant funding applications for revegetation, consider recreation facility and activity needs, and have a 30-50 year horizon. The park environment plan will consider directions of the current Sustainable Land Use Plan, Proposed Natural Resources Plan, Whaitua Implementation Programme, and other relevant documents or directions.	Short
42	Further stream and waterway fencing and retirement of grazed areas throughout the park to support passive and active native vegetation restoration	Ongoing
43	Continue to support mana whenua and park stakeholders particularly with secondary planting to support existing restoration programmes	Ongoing
44	Consider any proposals for establishment of a café/ commercial operation in the park in the vicinity of Whareroa beach. From park visitor feedback, there appears to be demand for this facility in the park.	Medium
45	Work with Kapiti Coast District Council and NZTA to reinstate historic clusters of poplar trees (removed for road works) along the southern side of Poplar Avenue within the park, in Raumati South.	Short

5.9 WAINUIOMATA RECREATION AREA

Most of the facilities in this recreation area are close to the rangers office where there is good passive surveillance. Vandalism has been an issue, particularly in the entrance area but has reduced with installation of new electronic gates to limit vehicle access. A 'history of water' story telling interpretation hub/museum is being developed to support existing interpretation panels in the lower dam/ ranger office area.

	Proposal	Estimated time frame Short 1-3 years Medium 4-10 years Long 10+ years
46	Complete water heritage interpretation hub/museum at lower dam including the history of water museum and outdoor jigger display	Short
47	Develop new loop track and bridges from Lower Dam area to a new track leading to the pa harakeke and the Sledge track and a circuit east of the lower dam, the crossing Wainui River. This activity is identified in the proposed new Ten Year Plan programme.	Short
48	To protect significant environmental values (kiwi are present), it is proposed that wilderness camping will no longer be permitted in this park.	Short
49	If community interests support it, redevelop the pa harakeke / flax gardens for harvesting and weaving purposes	Short-Medium
50	For consistency with other Greater Wellington park names, change the name from 'Wainuiomata Recreation Area' to 'Wainuiomata Regional Park'	Short

HAVE YOUR SAY

Feedback form

We are interested in your feedback about regional parks

The information collected in this consultation will be used to inform the development of a new Parks Network Plan. If you would like to discuss park management issues with a planner please contact Parks Planning on 04 830 4153 or email parksplanning@gw.govt.nz

If you would like to be informed about future park management planning or the draft new management plan when it becomes available for feedback please provide your contact details.

Please send your feedback to: Parks Network Plan Review:

Email parksplanning@gw.govt.nz

Post to Greater Wellington Regional Council, Freepost 3156, PO Box 11-646 Wellington

Or drop your feedback form into a GWRC office.

The feedback period closes at 5pm on Friday 9 June 2018

FEEDBACK FORM

The feedback period closes at 5pm on Friday ?? June 2018

NAME/ORGANISATION (IF APPLICABLE)

NUMBER STREET NAME

SUBURB/TOWN POSTCODE

PHONE

EMAIL

Please note that feedback may be made publicly available under the Local Government Official Information and Meetings Act 1987. If you are submitting feedback as an individual and do not want your contact details publicly available, please let us know in your feedback. We will then consider removing your contact details.

1. What do you think are the most significant issues facing regional parks now and over the next ten years?

2. What do you value most about particular regional parks? For example, particular landscapes, places, trails, or recreation activities?

3. What should Greater Wellington do to improve our regional parks? For example, are facilities needed in a particular place or accessibility improved?
4. Do you have any feedback about issues or opportunities raised in this discussion document or the supporting documents (***External Influences on Parks*** and ***Farming in Regional Parks***)?
5. Do you have any feedback about particular aspects of the current Parks Network Plan? www.gw.govt.nz/greater-wellington-parks-network-plan/

email to: parksplanning@gw.govt.nz

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REGIONAL COUNCIL
Te Pane Matua Taiao

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Greater Wellington Regional Council
Consultation for Long Term Plan 2018-2028
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Wellington 6142

Attachment 2 to Report 18.53

EXTERNAL INFLUENCES ON REGIONAL PARKS

A supporting document for the Parks Network Plan Review 2018

Storm damage after ex Cyclone Gita at the Wainui Stream mouth, Queen Elizabeth Park, February 2018. For visitor safety the remaining sections of the bridge were removed.

CONTENTS

greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

External influences on Regional Parks

May 2018

SUMMARY

More people in the Wellington region are visiting more parks, more often, and park users are participating in a growing number of activities. User conflict has increased, as has demand for toilets and signage, but overall visitor satisfaction has remained consistently high (~ 90%) for about a decade. The key issue people raise about the management of regional parks is that Greater Wellington could provide more information, including publicity about park locations, facilities, features and upcoming events. The things that users value most about the parks experience are the sense of freedom and tranquillity and the ability to recharge in the natural environment.

New Zealanders are living increasingly sedentary lifestyles, contributing to rising rates of overweight and obesity. A key aim of providing recreation opportunities in regional parks is to contribute to healthy lifestyles within the region. The health benefits of parks can be maximised by designing spaces in parks that are readily accessible and inclusive, and that encourage visitation by accounting for diverse users' motivations and needs.

The region's population is forecast to grow by 15% between 2018 and 2043. Though Wellington City is expected to remain the key regional economic centre, factors such as land prices and improved transport connections could result in a more dispersed model of business activity across the region. Almost all of the suburbs that neighbour our regional parks are projected to experience an increase in "empty nesters and retirees" (aged 60-69), "seniors" (aged 70-84) or both. The growing older population has implications for regional parks in terms of provision of facilities and activities for parks visitors, as well as changing the make-up of parks volunteers.

Of the current regional park visitors, 91% live within the region. Domestic tourists comprise about 6% of the total park visitors, international visitors about 3%. While small in number, domestic and international tourists are a growing segment of park visitors. Tourism-related employment numbers are also expected to grow. The combined impact of tourism and associated employment growth will increase demand in the region for use of parks and associated recreational opportunities.

Technology in parks can connect people to nature, providing unprecedented access to species and habitats and to incredibly rich data about complex ecosystems. At the same time, it has the potential to cause unintended harm. Thoughtful use and integration of technology in parks with the aim of enhancing rather than disturbing people's experience of the natural world could encourage greater usage and enjoyment of our regional parks.

One of Greater Wellington's key sustainability goals is to continually lower the carbon footprint of our activities and operations and improve environmental outcomes. The afforestation and revegetation programs taking place across the parks network contribute significantly to carbon sequestration in the Wellington region. Natural and semi-natural parkland provides global benefits as a store of carbon in soil and trees.

The growing urgency to remove more carbon from the atmosphere will increase the importance of tree planting activity and pest control in parks.

The effects of climate change are already being seen across the Wellington region with average annual temperatures and sea levels on the rise. Impacts on parks may include coastal erosion making tracks and infrastructure inaccessible, loss of habitats, and increases in pest plant and animal species. Management of the parks network into the future will require an adaptive management approach that plans for a range of future climate scenarios. In addition to climate change, the many other influences on regional parks are summarised below in figure 1.

External influences on regional parks

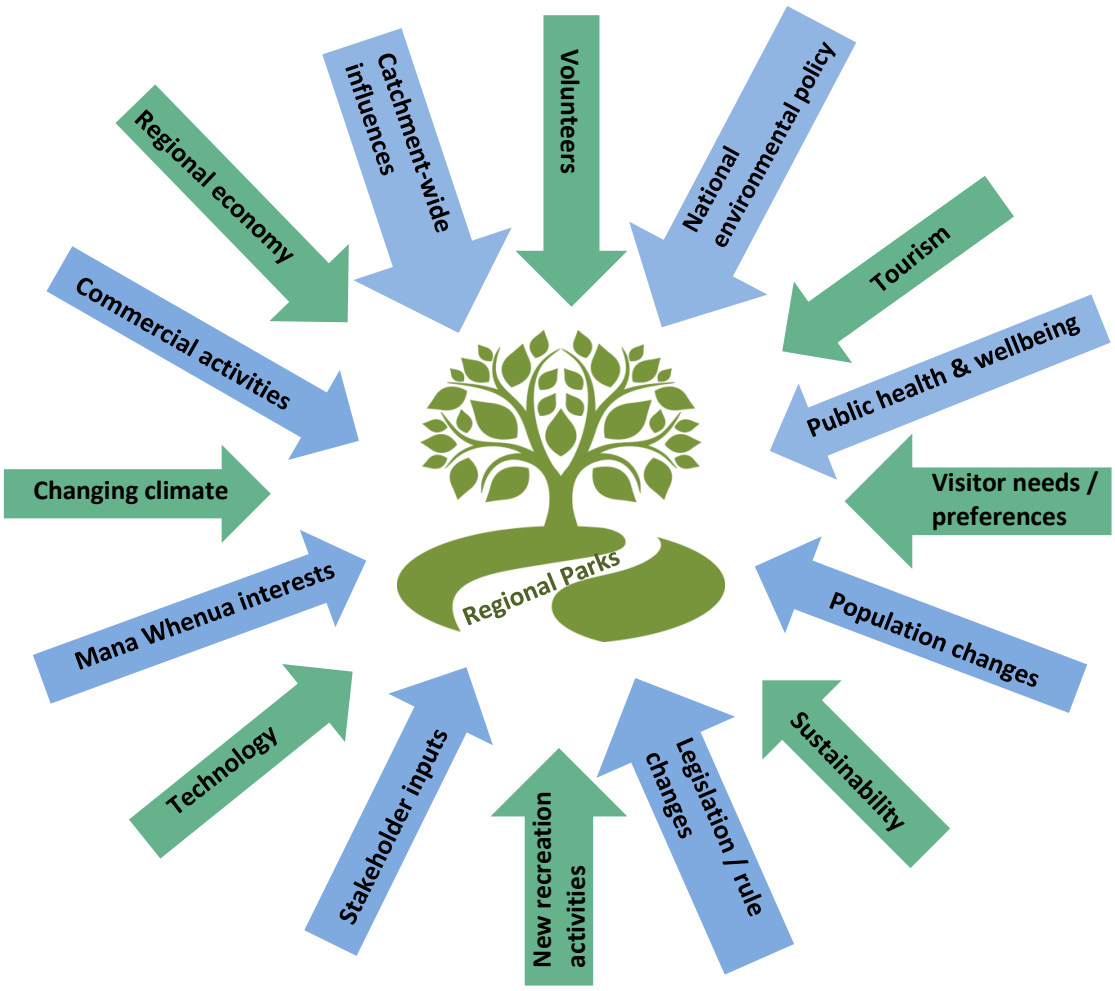
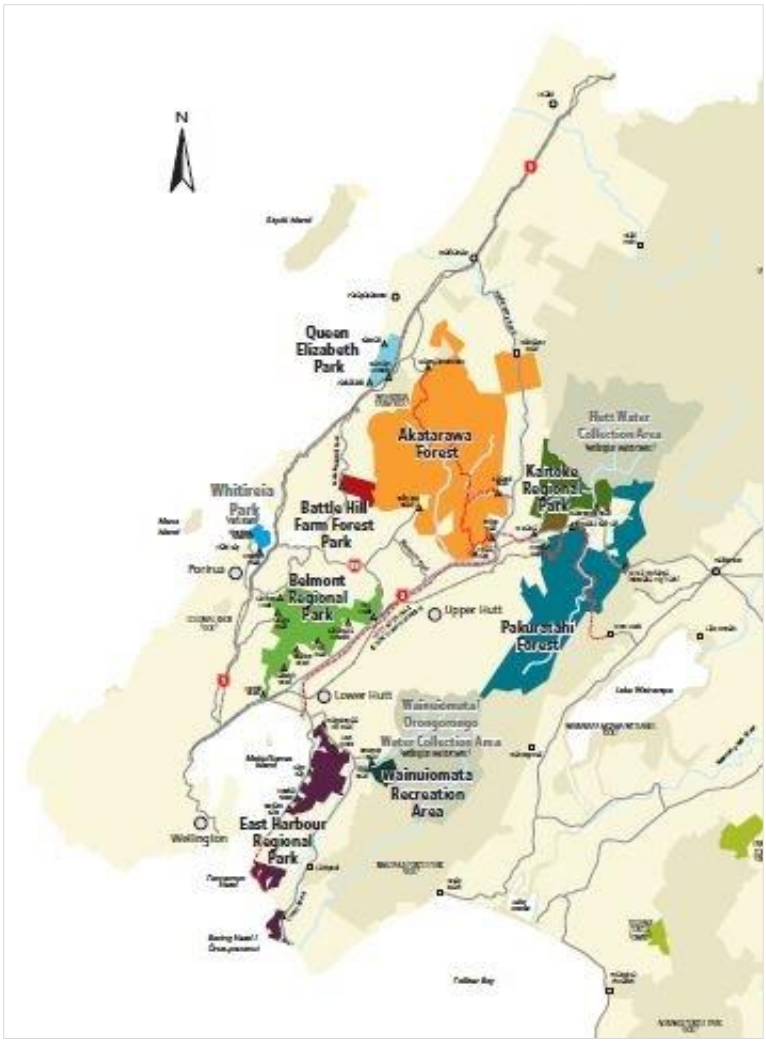


Figure 1: The parks network is affected by factors including climate change, changes in legislation, and changes in the public's demands.

1. INTRODUCTION

Greater Wellington Regional Parks Network

Greater Wellington Regional Council (Greater Wellington) manages a network of regional parks and forests for the community's use and enjoyment and for the preservation of ecological and cultural values. Regional parks and forests provide for a wide range of healthy outdoor recreational activities that enable Wellington region residents and visitors to connect with nature and enjoy the outdoors. They offer diverse landscapes ranging from lush native bush to open grasslands, farmlands with grazing animals, rugged coastal headlands and long sandy beaches. Some regional park and forest areas are adjacent to city parks and trails while some are more remote.



The PNP details how Greater Wellington will manage the parks network. Note though that the parks network does not include Whitireia Park and the Hutt and Wainuiomata/Orongorongo Water Collection Areas.

Trail based activities in our parks are the most popular – walking, dog walking, running, mountain biking and horse riding. Picnics and camping are also popular along with hunting and 4-wheel driving in some parks. Park management activities and rules help to ensure that the different types of visitor activities can take place with minimal impact on the environment and others.

Parks Network Plan Review 2018-2019

The current Greater Wellington Parks Network Plan (PNP) is a composite plan encompassing eight parks and forests. It aims to provide a coherent, consolidated management regime for the parks network as a whole as well as specific management provisions for each park. The PNP covers over 33,000 hectares. The parks network comprises of Battle Hill Farm Forest Park (Battle Hill), Belmont Regional Park (Belmont), East Harbour Regional Park (East Harbour), Kaitoke Regional Park (Kaitoke), Queen Elizabeth

Park (QEP), Akatarawa Forest (Akatarawa), Pakuratahi Forest (Pakuratahi), and Wainuiomata Recreation Area (Wainuiomata).

The area covered within the PNP includes land that Greater Wellington manages, including reserves established under the Reserves Act 1977. The Reserves Act requires that administering bodies keep management plans under continuous review (section 41), adapting to changing circumstances and increased knowledge.

The current PNP was finalised in 2011 and has had three amendments since then in 2012, 2014 and 2016 - so it remains relatively current. However, the directions of other new policy documents such as the Greater Wellington proposed Natural Resources Plan (pNRP) should be reflected in the plan. Greater Wellington considers it appropriate to commence a review of the PNP and develop a new one.

Please note that throughout the document, 'regional parks network', 'parks', "forests" and 'the network' are used interchangeably.

1.1 Purpose of this supporting document

This document outlines the external context for parks as a supporting document for the PNP review. It identifies the major factors and trends that are likely to have an impact on regional parks management and usage across the Greater Wellington parks network during the life of the next generation Greater Wellington PNP. These influences include:

- **Changing park visitor activity preferences**, expectations and experiences over time
- **Population health and physical activity trends** regionally and nationally and how parks can contribute to improving health and wellbeing
- Current and **forecast population, employment and age distribution** figures across the region and the possible impacts on parks accessibility, activities and facilities
- **Tourism trends** and the impact these may have on regional parks visitor numbers and infrastructure
- **Relationships with our mana whenua and mātāwaka Māori partners** and their interests in relation to parks
- **Technological changes** and the effects that communications, transport and other technologies are having on the way people engage with parks
- **Climate change** and impacts such as sea level rise, extreme weather events and sustainability and parks
- **Key guidance** from legislation and national policy for park management.

1.2 Park users preferences, expectations and experiences

More people in the region are visiting more parks, more often, and park users are participating in a growing number of activities. User conflict has increased, as has demand for toilets and signage, but overall visitor satisfaction has remained consistently high (~ 90%) for about a decade. Lack of time and other commitments are the top reasons people give for not having visited parks or not visiting more often. The key issue people raise about the management of regional parks is that Greater Wellington could provide more information about these, including publicity about park locations, facilities, features and upcoming events. The things that users value most about the parks experience are the sense of freedom and tranquillity and the ability to relax and recharge in the natural environment.

This section uses time series data to identify and contrast changing park user preferences, values and satisfaction levels in relation to regional parks over a number of years, spanning the life of the first generation PNP.

Park visitors enjoying the Te Ara Whareroa trail in QEP. It is important to Greater Wellington that we understand what park visitor's needs and preferences are, and what barriers to access there may be. One way we seek visitor feedback is by phone surveys.

Greater Wellington has commissioned quantitative market surveys over a number of years to provide insight into public awareness, usage and enjoyment of Greater Wellington's regional parks and their facilities. A randomly selected sample of 500 residents aged 16+ are interviewed each survey year using a combination of contact approaches and interviewing procedures. The majority of interviews are undertaken by way of telephone interviewing (landline and mobile). Face-to-face interviews are done where necessary, to meet stratified sample quotas and to ensure that a proper cross-section of the community is engaged. The surveys help Greater Wellington to gain greater understanding of park users' motivations, behaviours, needs and what they value most from their park experiences. We note that an implication of this approach is that it does not capture the perspectives of people who are not residents and ratepayers in the Greater Wellington region. The results of these surveys are summarised in sections 1.2.1-1.2.5 below. Appendix 3 contains more detailed findings from park visitor intercept surveys conducted across the Greater Wellington parks network, which capture the views of park visitors from both inside and outside the region.

1.2.1 Park visits

Frequency of parks visits, number of parks visited and number and types of activities undertaken

The results show a gradual but steady upward movement in the percentage of residents across the Greater Wellington region visiting regional parks, with an increase from 53% to 68% of respondents between 2010 and 2017. Survey results over this period also reveal an upward trend in the average number of parks people have visited in a twelve-month period.

Survey year	2010	2011	2012	2014	2017
Residents who had visited a regional park in the past year (%)	53%	59%	63%	64%	68%
Average number of parks visited in the past year	1.9	2.1	2.1	2.5	2.7

Table 1: Percentage of residents who visited a park over the previous 12 months and number of parks visited

The results also reveal that not only are there a growing number of people visiting parks, but they are using the parks for a greater number of activities. Park users in the

2017 survey indicated that during the past twelve months they had undertaken an average 2.2 different activities in the regional parks, compared to 1.5 activities in the 2014 survey.

Table 2 below lists the activities that park users freely recalled having undertaken in regional parks, in order of highest to lowest participation levels.

Activities	Survey year			
	2011	2012	2014	2017
	%	%	%	%
Walking/bush walking	54	62	53	72
Mountain biking/cycling	17	14	10	26
Picnics/barbeques	17	22	11	19
Family outings/recreation	18	25	21	16
Walking/running with dog	7	7	10	12
Outings with organised groups	7	9	9	10
Camping	3	5	5	9
Swimming	5	2	8	7
Driving for pleasure (4WD, trail biking)	N.A.	N.A.	N.A.	6
Photography	N.A.	N.A.	N.A.	6
Fishing/hunting	N.A.	N.A.	N.A.	6
Horse riding	N.A.	N.A.	N.A.	4
Running/jogging	6	5	6	3
Tramping	2	2	2	3
Participated in organised sports event	1	1	1	2
Other activities	11	12	12	16
Average no. of activities	**1.5**	**1.7**	**1.5**	**2.2**

Table 2: Activities in parks across survey years

Note: N.A.= Not shown separately in these years. These activities were included in 'other activities'.

'Walking/bush walking' remains the No. 1 activity, but there has been an increase in participation rates for many of the other activities. Greater Wellington has noted, unsurprisingly, increased conflict between user groups such as cyclists and walkers as visitor numbers have grown.

A relatively high number of park users also report having experienced problems with dogs.[1] According to Greater Wellington's intercept surveys of park visitors, 21% of people visiting the parks network had dogs. Pakuratahi had the highest proportion of visitors with dogs at 30% and Akatarawa had the lowest proportion at 15%. Dogs are not allowed in Battle Hill. A number of respondents in the 2017 survey, when asked if 'there are any other activities they would like to do in the regional parks, that they are currently unable to do', indicated they would like more areas where people can walk their dog on or off the lead.

Between the 2014 and 2017 survey years, Greater Wellington observed a number of changes in park usage behaviour, including an increase in demand for various activities and facilities. There has been a notable increase in the number of campers at parks such as Kaitoke and Belmont, as well as an increase in commercial dog walking.

1.2.2 Visitor satisfaction

The telephone survey responses reveal that visitor satisfaction levels have remained consistently high over time. The proportion of visitors who reported being either satisfied or very satisfied with their visits to Greater Wellington regional parks has been over 90% in all but one of the 6 survey years since 2008 (see Figure 2).

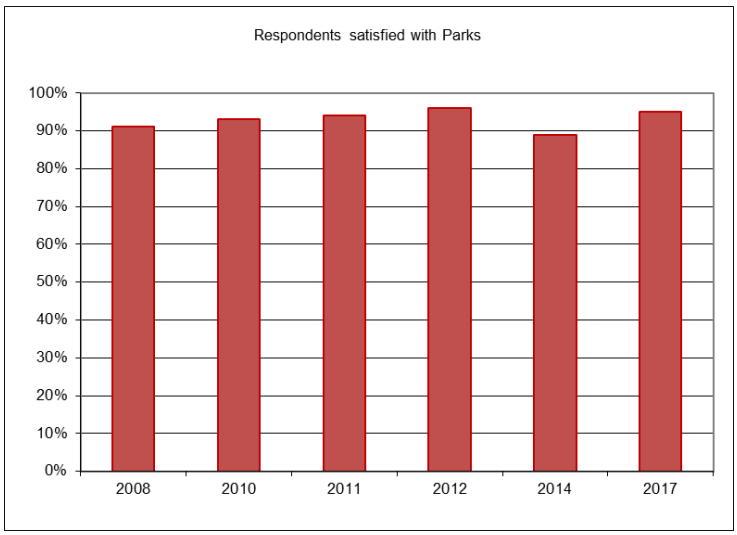


Figure 2: Park visitor satisfaction from 2008 to 2017

The telephone survey also explored satisfaction levels relating to specific aspects of visitor experience. The 2017 survey results indicate that satisfaction levels generally remain high for most aspects of the park experience. The main areas of dissatisfaction among park users are provision of toilet facilities and signage. These were considered inadequate by 23% and 14% of park users respectively. Greater Wellington has incorporated the provision of more toilets into its budget projections. The top issue that people wished to draw attention to in relation to the management of the regional parks in 2017 was the need for more information/education about the parks, where they are, what can be done in them, and what activities are coming up.

1 Reported issues include dogs off the lead, dogs fighting, and "problem dog owners".

1.2.3 Barriers to visiting parks

Other commitments such as sports and family, were the reasons given by nearly half (41%) of the 32% of total respondents in 2017 who had not visited any Greater Wellington regional parks in the past twelve months. Similarly, of the 68% of respondents who had visited any of the Greater Wellington regional parks in the past twelve months, the majority (51%) reported that the main barriers to visiting more frequently were lack of time and other commitments. Factors relating to access, for example lack of transport, time it takes to travel to regional parks, and having limited or no mobility were also commonly cited barriers for both visitors and non-visitors.

1.2.4 Accessing information about parks

The results of the 2017 survey suggest that Greater Wellington still needs a variety of channels to communicate with existing and potential park users. Responses showed that a wide range of channels are used and preferred, and that the way park users access information is changing. For example, while no respondents indicated that they had used smart phone apps for accessing information in the past twelve months, 10% selected this option as one of their preferred sources for receiving regular, on-going communication. Social networking sites (predominantly Facebook) also had a substantially higher level of preference compared with current usage.

Social media such as Facebook and Instagram are a core part of communicating about recreation and conservation activities.

1.2.5 Future directions from research for park management

More people doing more activities in more parks more often means:

- More toilet facilities and improved signage maybe needed to meet the growing number of park users requirements
- As visitor numbers increase, there may be a need for more education and awareness activities, so to encourage park visitors to share facilities with care and regard for one another 'Share with care' is already a focus of multi-use trails, but to avoid duplication of facilities further promotion may be required, and where appropriate separation between activities created. This could mean identifying more dog-on leash or no-dog areas and increasing behavioural information about sharing facilities and being considerate of others. Developing or redeveloping trails to support increased demand for cycling may also be required
- Looking at ways to ensure there is good access to the parks and their features and amenities for all user groups, including trying to improve connections with active and public transport modes. Greater Wellington will need to do this in collaboration with NZTA and the region's Territorial Authorities.

The main barriers to visiting regional parks (being lack of time and competing commitments) are largely outside of Greater Wellington's sphere of influence. However, possibilities exist for addressing the perception that visiting parks is too time consuming. Options include promoting more short walks and cycle tracks for 'rapid recreation', and highlighting how accessible many of the parks are (e.g., Belmont, East Harbour and QEP) in relation to many people's homes, workplaces, and other amenities. As new residential subdivisions develop near parks, enhancement of some entrance facilities may be required.

Park user preferences for sourcing information encompass a range of traditional and emerging media. Digital media sources (e.g., websites, social media and apps) are growing in importance for on-going communication about the regional parks. Greater Wellington and partner agencies can and are harnessing the increasing prevalence of and preference for accessing information via digital channels.

2. PUBLIC HEALTH

New Zealanders are living increasingly sedentary lifestyles, contributing to rising rates of overweight and obesity. A key benefit of regional parks is their contribution to the health and enjoyment of the people of the region through provision of a range of recreation opportunities. The health benefits of parks can be maximised by designing spaces within these that are readily accessible and inclusive, and that encourage visitation by accounting for diverse users' motivations and needs.

Getting outside and playing in natural settings is essential part of development for children. Regional parks offer an abundance of unstructured, nature play

New Zealand has the third highest adult obesity rate in the OECD, and our rates are rising. Almost one in three adult New Zealanders (over 15 years) is obese, and one in ten children. The adult obesity rate rose from 27% in 2006/07 to 30% in 2013/14. Overall, obesity rates in the Wellington region are similar to the national figures. Obesity rates in the Capital and Coast DHB area are below the national average, at 25.5%, while among the communities of the Hutt Valley and Wairarapa, obesity rates are slightly higher than the national average at 31% and 32% respectively.

Further, less than half of adults aged 15 years and over across Wellington, Porirua and Kāpiti Coast are considered physically active (around 48%), less than the national average of 52%. Physical activity rates in the Hutt Valley are on par with the national average, and those in the Wairarapa area are significantly above average, with about 68% of people considered physically active.

Taking time to be still and watch nature is good 'detox' for busy urban lives. In Japan, it's called 'nature bathing'. Here in Wellington, regional parks are not far from home for many people and offer lots of opportunities for being active or just enjoying the views.

2.1 Public health and parks

Access to quality open space is widely considered to have a positive impact on community health and wellbeing. A recent literature review on the health benefits of parks and natural spaces concluded that the evidence connecting parks and health is substantial. This finding offers justification for the promotion of and investment in parks, as settings that enhance the health and wellbeing of community members across their life.[2] However, do note that much of the research exploring the relationship between parks and human health is either anecdotal or descriptive. Of the relatively small number of experimental studies that have rigorously tested differences between natural and non-natural settings, many of the positive effects were not statistically significant or related to very small sample groups. This suggests further investigation of activities undertaken in parks and their health and wellbeing benefits is required to better understand this relationship, especially within a New Zealand context. For example, it is estimated that Londoners avoid £950 million per year in health costs due to public parks. This total avoided cost comprises £580 million per year and £370 million per year by being in better physical health and mental health respectively.[3]

Some of the specific health benefits that have been linked with time spent in parks include disease regulation, livelihood support, mental and spiritual well-being, access to medicines (e.g., plants used in Rongoā Māori -the traditional Māori healing system), and as settings for physical activity.[4]

Regional parks provide a range of activities. At Kaitoke the Hutt River offers a chance to jump into the deep or play in the shallows.

Public green spaces like regional parks provide a range of ecosystem services that are fundamental to human health. This includes the provision of food, clean air, water and soil. As well as these ecosystem services, parks provide a range of other health benefits that are delivered through people spending time in and being directly

[2] Townsend, M et al. (2015): Healthy Parks Healthy People: the state of the evidence 2015. Report prepared for Parks Victoria.

[3] Vivid Economics (2017): Natural capital accounts for public green space in London. Report prepared for the Greater London Authority, National Trust, and Heritage Lottery Fund.

[4] For example: ICUN World Parks Congress (2014): Improving Health and Well-being Stream Report; Konijnendijk, C. C. et al. (2013): Benefits of Urban Parks, A systematic review. Report prepared by the University of Copenhagen for IPFRA.

exposed to natural settings for purposes such as recreation, education or contributing to conservation efforts.[5]

2.2 Connecting people to parks to improve health and well-being

Parks are a cost effective means of maintaining physical and psychological wellbeing.[6] A recent literature review of research on the health benefits of parks found that the potential for improving health through use of parks can be enhanced through the promotion of the benefits of nature by park managers, researchers and policy makers. The report also concluded that the health benefits of parks might be maximised by designing spaces in parks that are readily accessible and inclusive, and that encourage visitation by accounting for diverse users' motivations and needs.[7]

Greater Wellington regional parks provide for a range of activities including walking, biking and picnics and more adventurous activities such as mountain biking and four-wheel driving. One of the aims of providing recreation opportunities in regional parks is to contribute to healthy lifestyles and well-being within the region. This role is now more important than ever, given New Zealanders' increasingly sedentary lifestyles and rising rates of overweight and obesity.

Structured outdoor activities in partnership with the health sector are one way to forge collaborations that produce programmes to help people get active in parks. An example in the Wellington region is Riding for the Disabled Association in Battle Hill. The Association's mission is to develop confidence, independence and well-being for people with disabilities through therapeutic horse-related programmes.[8]

Internationally, there are a range of examples of "park prescription" initiatives designed to harness the health benefits of helping people to get active in parks. [9] In San Francisco park prescriptions are fully integrated throughout the public health system; all 7 million residents in San Francisco Bay Area have access to a 'Healthy Parks Healthy' People Program.[10]

[5] Blaschke, P. (2013): Health and wellbeing benefits of conservation in New Zealand. Science for Conservation Report 321 prepared for the Department of Conservation.

[6] https://www.theparksalliance.org/who-we-are/objectives/

[7] Townsend et al. (2015): Healthy Parks Healthy People: the state of the evidence 2015. Report prepared for Parks Victoria.

[8] https://wellingtonrda.org.nz/

[9] "Connecting people and parks". Session 14 of the Improving Health and Well-being stream at the World Parks Congress, Sydney, 2014.

[10] Other examples include Active in Parks: an Australian-developed online resource to help people to find information about activities in parks to encourage people to get active in nature https://activeinparks.org/ and Branching Out: a 12-week outdoor programme developed in Scotland for people suffering from a mental illness http://scotland.forestry.gov.uk/supporting/strategy-policy-guidance/health-strategy/branching-out.

3. POPULATION GROWTH, AGE, AND EMPLOYMENT DISTRIBUTION

The region's population is forecast to grow by 15% between 2018 and 2043, from a little over 500,000 to almost 585,000.[11] Though Wellington City is expected to remain the key regional economic centre, factors such as land prices and improved transport connections could result in a more dispersed model of business activity across the region. Almost all of the suburbs that neighbour our regional parks are projected to experience an increase in "empty nesters and retirees" (aged 60-69), "seniors" (aged 70-84) or both. The growing older population has implications for regional parks in terms of provision of facilities and activities for parks visitors, as well as changing the make-up of parks volunteers.

3.1 Projected population growth and employment distribution

Wellington region is the third largest region in New Zealand by population. The region's population is expected to grow. About half of the forecast regional growth will be in Wellington City, and around 30% of that is likely to be focused around Wellington's central city and northern suburbs. Outside Wellington City, regional growth will primarily be in the form of urban expansion into green field land, particularly in Porirua and Kāpiti, and denser housing development in and around existing urban centres such as Hutt City, Petone and Porirua. Figure 3 depicts projected population growth across the region over the next 25 years.

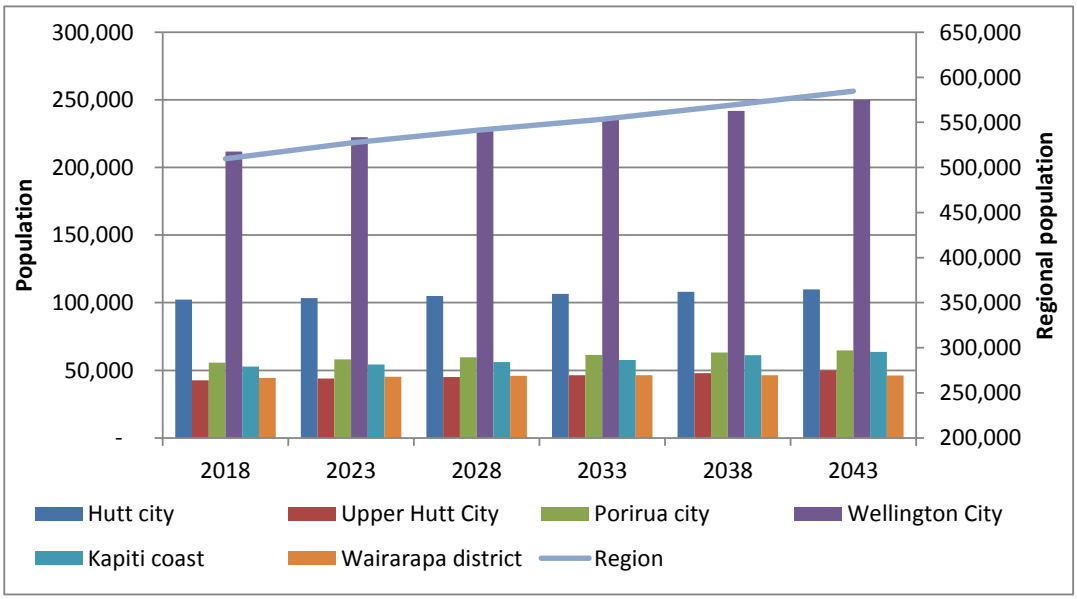


Figure 3: Forecast population by Territorial Authority and regionally (2018-2043)

[11] Forecast ID https://blog.id.com.au/2016/population/new-zealand-population-census/forecasting-in-new-zealand-building-regional-knowledge-in-the-wellington-region/

Nearly 60% of the region's current jobs are concentrated in Wellington City, with 60% of those jobs located in the CBD. Over the next 30 years, Wellington City is expected to remain the key regional economic centre, with 80% of employment growth occurring in the City, although land prices, improved transport connections, and resilience issues could result in a more dispersed model of business activity. A growing Kāpiti population is likely to increase visitor numbers for QEP and Akatarawa. Similarly, population growth in Porirua may increase demand for Battle Hill. A growing concentration of population in Wellington City may have implications for accessibility to parks and transport options.

As our parks get busier, key facilities sometimes need to be upgraded to better meet demand. Replacing this bridge at Kaitoke with a more accessible one suitable for people of all abilities and bicycles is proposed as a key Long Term Plan priority action.

It is worth bearing in mind however that, while many parks visitors do frequent the parks that are closest in proximity to where they live, many people visit parks in other parts of the region. For example, park visitor intercept surveys show that Wellington City residents are more likely to visit East Harbour and QEP, while Porirua residents are most likely at Battle Hill but are prepared to travel all over the region to other parks. Therefore, we cannot assume that changes in population size and age distribution in neighbourhoods closest to each park will only have implications for that particular park. However, it is likely though that closer proximity will mean greater impact.

3.2 An aging population

Greater Wellington park visitor intercept surveys suggest that currently "parents and homebuilders" (35 to 49 years) are the largest group of park users (32%), followed by 50 to 69 years (25%) and under 16 years (22%).[12]

A notable trend across almost all of the suburbs that neighbour our regional parks is the projected increase in people in the 60-69 and 70-84 year age brackets. Te Marua, a suburb that nestles between Akatarawa and Pakuratahi is the sole exception: here the only age group projected to significantly increase by 2043 is the 35-49 year bracket. We discuss the possible implications of an aging population on Greater Wellington regional parks management and infrastructure at the end of section 4.

[12] Detailed results from Greater Wellington park visitor intercept surveys are in Appendix 3.

4. TOURISM

Of current regional park visitors, 91% live within the region. Domestic tourists comprise about 6% of the total park visitors, international visitors about 3%. While small in number, domestic and international tourists are a growing segment of park visitors. Tourism-related employment numbers are also expected to grow. The combined impact of tourism and associated employment growth will increase demand in the region for use of parks and associated recreational opportunities.

4.1 Current and projected tourist numbers at parks

Current usage of regional parks is dominated by regional and local populations. Visitation surveys conducted within regional parks showed that domestic tourists (NZ visitors who aren't resident in the region) comprise approximately 6% of the total number of visitors on average, and international visitors approximately 3%. The makeup of this user profile is diverse across age, gender and ethnicity.

The Remutaka Cycle Trail is a key tourism and recreation trail for the region. It offers a depth of experience for visitors with many interesting railway heritage relics featuring along the trail, such as these former railway engine parts at the Summit Yard area.

The number of international tourist visitors to regional parks is likely to rise, given the annual growth rate (from 2014-17) of international visitors to national parks was 11%. The growth rate for international tourists who did not visit national parks was 6%.[13] This is in line with international tourism growth aspirations for NZ nationally, which are in the range of a 6% increase, year-on-year.

Tourism is likely to continue to be a source of economic growth in the Wellington region, with guest nights expected to increase on average by 2% per year. As a consequence, tourism-related employment numbers in the region are also expected to increase. The combined impact of tourism and associated employment growth will increase demand in the region for use of parks and associated recreational opportunities.

Approximately 3.2 million international visitors aged 15 and over currently visit New Zealand each year, of whom 1.7 million visit national parks.[14] In the financial year ending June 2017, 52% of all international visitors to New Zealand visited one or more national parks. In addition, approximately 40% of New Zealanders aged 18 and over also visit national parks[15], equating to around 1.2 million people.

The Greater Wellington parks network provides public open spaces that complement the smaller urban parks provided by city and district councils and the larger national parks managed by the Department of Conservation. The latter are generally more

[13] Department of Conservation (2017_: National status and trend reports 2016-2017: National recreation and tourism trends. http://www.doc.govt.nz/2017-annual-report-factsheets/?report= International_Visitors_trends_in_National_Parks

[14] http://www.mbie.govt.nz/info-services/sectors-industries/tourism/tourism-research-data/ivs

[15] According to DOC's annual Survey of New Zealanders

remote and less developed in nature. Regional parks provide a mix of recreation and conservation opportunities, focusing on protecting values of national and regional significance.

4.2 Tourism, population growth and demographic change influences

Tourism demand, while currently only a small component of parks usage overall, is likely to have an impact on specific sites within the parks network. These are likely to include high use facilities in Kaitoke, the Remutaka Rail Trail (Pakuratahi), shortstop visitors at Pencarrow, and accessible camping for budget-focused tourists at Dry Creek in Belmont. Expected changes in use include an increase in the number of independent travellers and budget camping, cruise tourism, and a larger proportion of domestic and international campervan users. We expect these changes to generate peak loading pressures at key sites, where seasonal capacity levels peaks are already common, for example at Dry Creek. For some sites, there are only limited options to manage spikes in usage without triggering costly infrastructure extension work (e.g., carpark extensions, additional toilets and other supporting infrastructure). Additionally, at some sites, physical space to expand is already limited (e.g., the Pakuratahi Forks carpark at Kaitoke).

The campground at Dry Creek in Belmont is particularly popular with international tourists who can enjoy budget accommodation close to Wellington and the Cook Strait Ferry terminal.

In its provision of park facilities, activities and programmes, Greater Wellington is anticipating and planning for additional peak use pressures on sites visited by tourists. This is reflected in the levels of service developed for current and future years. Though increased pressure on parks from larger tourist numbers is likely to be gradual rather than immediate, incremental changes in demand can have a profound impact on the management of park assets. For example, the growing popularity of Kaitoke as a visitor destination has occurred since the original swing-bridge was installed near the Pakuratahi Forks. The growth in tourist use of this area, stemming from Lord of the Rings tourism, has created a widening capacity gap. Now the site's 10-person load limited, single person width bridge is no longer able to handle peak usage.

A changing population poses additional demands on these types of structure. In the case of the swing bridge at Kaitoke, a higher grade of structure is needed as a replacement, with reduced maximum slopes and sufficient passing width to carry wheel chairs/ buggies and a larger volume of peak traffic. Similarly, to handle growth in peak loading the carpark and toilets at this site, Greater Wellington may need to reconfigure and enlarge these assets. Such upgrades can result in a cascade of additional investment triggered initially through growth in demand from an unplanned event. In this case, the event was the use of a site as a location for a high profile film series.

The region's aging population also has implications for the demographic make-up of Greater Wellington's volunteer workforce. Many of the people who currently volunteer in regional parks are retired or nearing retirement, and we expect that the proportion of volunteers aged 65+ will rise as the average age of the regional population increases. This may have implications for the types of work that volunteers wish to undertake, and the skills and experience they bring to the job.

Finally, it is worth reflecting on possible combined implications of tourism and an aging population. It is estimated that by 2020, 25 per cent of the tourism market worldwide will comprise people with a disability. Planning for the growth in inclusive tourism, driven predominantly by the retirement of the baby boomer generation, will need to factor into regional parks management in terms of provision of facilities and access to parks features and activities. Ultimately, this is about creating an environment where people of all ages and abilities feel welcome and provided for. Design that caters for the needs of everyone is often referred to as Universal Design or Design for All.[16]

5. TECHNOLOGICAL CHANGE

Technology in parks can connect people to nature, make management activities more efficient and effective, assist in collecting data to inform management, and at the same time isolate people more from nature with virtual experiences instead of real ones. Put to good use, aiming to integrate technology in parks, to enhance rather than disturb people's experience of the natural world, can encourage greater usage and enjoyment of our regional parks. It can also improve day-to-day management activities.

5.1 Educational and scientific technologies

The possible applications for technology in and for parks are practically limitless. The potential for technology to be used as a means of connecting people with nature is increasingly being recognised and explored. For example, taking photos for Instagram encourages people to pay attention both to the broad vistas and light conditions, and to the interesting things you see close up; patterns and textures of flora, fauna and historic heritage relics. Images are then shared across the world with people appreciating the beauty of local Wellington places.

Great photos of parks are shared through social media such as Instagram.

Geocaching, self-guided trails with QR codes, live streaming, education technology and virtual hikes are all examples of technology being used in parks around the world in parks and open spaces. These have the aim of *enhancing*, rather than disturbing, people's connection to parks and other nature spaces.[17]

Scientists and park managers can use images and audio from camera traps, microphones and drone footage to learn about the activity of a particular species, interactions between species, and the health of the overall ecosystem. Drone usage by visitors to Greater Wellington regional parks is

[16] Travability (2012): Inclusive tourism marketing toolkit. http://www.keroul.qc.ca/DATA/PRATIQUEDOCUMENT/166_fr.pdf

[17] http://www.nrpa.org/parks-recreation-magazine/2016/may/park-technology-exploring-opportunities/

evident already and growing in popularity.[18] In the future, new devices that can sense minute details of air and water quality could help parks subtly monitor environmental changes, and algorithms may help scientists sort through genomes. We will likely be able to sift DNA from streams and tease out subtle changes in forest ecology from satellite images.[19]

5.2 Information and communication technologies

The standard modes of communicating information about parks are also changing. Beyond brochures and websites, social media channels (Facebook, Instagram, SnapChat,Twitter, Google+ , LinkedIn, Pinterest and YouTube to name a few) and mass email programmes, such as MailChimp and ConstantContact, can and are being used to reach past, current and future parks users.

The way people search for and access information about parks is also shifting. User generated content like personal blogs and user reviews on platforms such as Trip Advisor are becoming much more common and influential. Information technology improvements are having a direct impact on usage of certain destinations in the Greater Wellington parks network. An example is a 2015 surge in camping at Dry Creek in Belmont coincided with it being identified in a budget camping app. It is anticipated that user generated information will have an increasingly important role to play in influencing park user decision making and expectations, further amplifying changes in usage patterns. In this context, the advantages of cross agency promotion and coordination of programmes become increasingly important.

New and emerging information technology is also being used to assist with research into how people engage with and experience parks. For example, the use of social media platforms including Facebook, Twitter and Instagram and algorithm software can be used to as a way of gaining insight into levels of happiness resulting from time in parks. Other new technologies, like wearables and remote sensing, can be used to aid health assessments and interventions within parks. This enables people to engage with their environment and offers them valuable feedback on health indicators.

Such technologies may augment, rather than replace, the important but more traditional ways of understanding people's experiences of parks, such as interviews, conversations, and surveys. Together, these approaches could allow more comprehensive understandings of the connections between parks and people's mental and physical health.[20] After all, parks are intended to be places that are free to enter and that generate happiness - where everyone feels welcome and experiences a sense of belonging.[21]

5.3 Transport technologies

In the Greater Wellington parks network over the life of the next PNP, usage of sites may change as transportation technologies improve. In the near term, electric bikes

[18] Greater Wellington developed guidelines for flying drones/ Unmanned Aerial Vehicles in regional parks following the Civil Aviation Authority's introduction of new rules in 2015 http://www.gw.govt.nz/assets/Parks-and-Recreation/WGNDOCS-1519009-v1-UAVdronesguidelineforwebsite26thAugust2015.pdf

[19] http://grist.org/business-technology/if-you-think-technology-has-no-place-in-the-national-parks-think-again/

[20] For example: Christopher Golden, Wildlife Conservation Society, USA (2014): How social media data can be harnessed to understand the effects of national parks on mental health.

[21] Emily Munroe (2014): 8-80 Cities, Canada – Healthy Parks Healthy people: 8-80 Cities and the Make a Place project.

and powered scooters may have the greatest impact, particularly cycle accessible trails. There could be demand for specific infrastructure within or near parks (such as electric vehicle charge stations or dedicated parks). Greater Wellington is actively promoting the use of electric vehicles through its 'Electric Vehicles First Policy'[22].

Electric Vehicles and autonomous vehicles are expected to significantly disrupt New Zealand's transport sector over the next ten years. At the time of writing the Wellington region has the second highest per capita ownership of electric vehicles in the country. Ownership rates are expected to increase further as market trends that are now well established continue. These include the range electric vehicles can travel on a single charge increasing, battery life and performance improvements, and falling purchase costs. Consumer uptake will also be dependent on the continuation and or enhancement of government policies designed to favour the adoption of these low emission technologies.

Autonomous vehicles are self-driving fully electric vehicles. Trials of this technology are currently occurring in multiple cities. Transport sector analysts expect that as the technology reaches maturity, 'mobility as a service' will become a prominent business model that disrupts and reshapes how people move around. This could have a significant impact on how people access parks.

Also, because cars will not be owned by individuals, (but provided as an on-demand service) the need for dedicated car parking spaces in regional parks could diminish overtime. While it is not possible to predict exactly when or how 'mobility as a service' in autonomous vehicles will manifest in the Wellington region, the arrival of autonomous vehicles may prove to be a significantly disruptive innovation. Future parks planning for things like layout and configuration of car parking spaces, access roads and laybys may need to take into account the implications of this fast emerging technology and its potential to change visitor's transport behaviour.

E-bikes are revolutionising cycling, enabling riders to reach destinations that were previously considered too far away or difficult to reach due to terrain such as large hills, or climatic conditions such as prevailing winds. Steep topography and strong wind are two factors that are highly relevant in a Wellington region context. E-bikes are also enabling a wider range of people to adopt cycling as a mode of transport, as the extra power offered helps overcome terrain difficulties.

Many of the parks in the Greater Wellington network are accessed via state highways and or rural roads that currently have limited provision for cycling. In the future, greater use of e-bikes to access parks may be enabled through more widespread provision of charging facilities across the region, and ongoing work by NZTA and the region's Territorial Authorities to provide safe cycling infrastructure.

6. SUSTAINABILITY AND RESILIENCE

The effects of climate change are visible across the Wellington region with average annual temperatures and sea levels on the rise. One of Greater Wellington's key sustainability goals is to continually lower the carbon footprint of our activities and operations and improve environmental outcomes. The afforestation and revegetation programs taking place across the parks network contribute significantly to carbon sequestration in the Wellington region. Natural and semi-natural parkland provides global benefits as a store of carbon in soil and trees. Management of the parks network into the future will require an adaptive management approach that plans for

[22] http://www.gw.govt.nz/assets/Climate-change/GWRCelectric-vehicle-policy-2016.pdf

a range of future climate scenarios and takes account of emerging low carbon innovations and technologies. The strategy's vision is that "Greater Wellington strengthens the long-term resilience and sustainability of the Wellington region through climate change action and awareness".

6.1 Greater Wellington's sustainability context

Sustainability at Greater Wellington is driven by a Council commitment to be a low carbon and zero waste organisation, identified in a Corporate Sustainability Action Plan in 2014. A review and refresh of the plan is currently underway. Greater Wellington's sustainability activities also act on policies from Greater Wellington's Climate Change Strategy and Implementation Plan (2015), and the organisation's Long Term Plan and Annual Plan goals. Greater Wellington monitors and evaluates progress on organisational sustainability objectives through the preparation of an annual corporate Green House Gas Inventory as well as a Sustainability Report.

Greater Wellington has three key sustainability focus areas for the future:

1. To continue to grow a culture of sustainability within the organisation and across all operations
2. To continue to mitigate climate change through reducing greenhouse gas emissions
3. To champion adaptive and innovative sustainability practices in the region through, for example, developing sustainable procurement policies

Quality green spaces such as the park network contributes to environmental sustainability by:

- Improving air and water quality
- Protecting and biodiversity and wildlife habitats from threats
- Restoring native and regionally appropriate plant species
- Fostering participation in healthy outdoor recreation activities, and engagement through events and volunteering.

Natural and semi-natural parkland also provides global benefits as a store of carbon in soil and trees. The pest management work that maintains and enhances the integrity of our forest ecosystems is key to ensuring the regional parks continue to act as valuable carbon sinks. New fast growing forests absorb increasing amounts of carbon from the atmosphere as they develop, meaning that the afforestation and revegetation programs taking place across the parks network contribute significantly to carbon sequestration in the Wellington region. Tree planting activities across the parks network will keep growing in importance as the urgent need to remove carbon from the atmosphere to combat climate change continues to intensify.

Climate change is already presenting challenges for park management. In 2015 the Korokoro stream catchment in Belmont received very high rainfall in a short period which resulted in flooding that damaged many of the assets in the valley.

6.2 The region's changing climate

The region is typically dry in the east and wet in the west and this pattern will be enhanced in the future. When it rains the rainfall may become heavier than it has been in the past, and when we get periods of drought they may last for longer. Storms are expected to occur more often in the future or be more severe. Combined with higher seas, these storms will exacerbate coastal areas with erosion and inundation events.

6.3 Likely climate change impacts and implications

Some of the potential implications and impacts of climate change for the Greater Wellington parks network are significant and are likely to be variable throughout the region:

Temperate and rainfall changes

- The number of days of very high and extreme forest fire danger are projected to increase by 100-150% by the 2090s for the Wellington Region
- Mean annual low flow of rivers is projected to decrease throughout the region, particularly in the east
- Mean annual flood is projected to increase in most parts of the region, particularly in the west. Changes to the hydrological regime in NZ rivers may impact the distribution of native species
- Increased rainfall intensity could increase flood intensity and exacerbate issues associated with erosion (slips etc)
- Sea level rise and consequent coastal fortification (to prevent coastal erosion) will result in the loss of habitats. Sea level rise will also affect infrastructure at risk of coastal inundation. Adaptation strategies may include restricting further development or retreating.

Flora and Fauna changes

- Native New Zealand plants and animals may change the ranges and altitudes they currently are found in as the climate warms and rainfall patterns change.
- Changes to timing of seasonal activities such as flowering, breeding, and migration may disrupt relationships between species.
- Changes in temperature and rainfall may allow pest species to move into new habitats where they may out-compete NZ's native species. Tropical and subtropical pests (e.g., certain mosquito species) that currently occur as seasonal immigrants may become established in the region with warmer temperatures. Biosecurity work may require more resources.

Impacts on people, park assets and the regional economy

- Coastal assets may need to be relocated inland or reinforced where they are coastal dependant
- Extreme weather events may increasingly impact people using or depending on parks for their livelihood
- Species used for customary harvest may disappear or be more abundant. Mahinga kai species may change with habitat changes
- Conditions for recreation activities may change with more or less wind, rain, water
- Tracks may require extra drainage, relocation to reduce erosion effects
- Heritage assets may continue to require extra strengthening to preserve and protect them

- Park licence holder activities may be impacted and need to change their activities e.g., farming and grazing
- Prolonged sunny, wet or cold summers influence park visits particularly for activities such as camping. A long sunny summer, such as that of 2017/18, results in more people camping in our regional park campgrounds and more ranger effort required to support this demand. Negative effects can be more frequent or longer lasting algal blooms in rivers and streams from low water flows making them unusable for campers.

Appendix 2 presents whaitua (catchment scale) tables that outline climate change projections for Greater Wellington's Regional Parks for 2040 and 2090.

6.4 Adaptive management for climate change

Prudent management of the parks network into the future will require managers to consider a range of scenarios, ensuring both the worst potential impacts of climate change are considered alongside more optimistic projections. This practice of planning against a range of potential futures is known as **adaptive management**.

Adaptive management encompasses:

- Being well **informed** about how the regional climate is changing and what it means for parks
- Being **organised** in our approach to asset planning and day to day management
- Taking **proactive** measures to manage aspects of the park environment most at risk of the effects of climate change.

Understanding the impacts is of course only half the story. It is essential to also understand what the *implications* of the impacts will be. For example:

- Increased storms and the severity of them will likely mean coastal and riverside trails and other assets will be impacted by flooding and erosion. In future they may need to be reinforced or relocated
- Warmer weather may change the time of year that some native species of tree fruit. This could have an impact on the food supply for some bird species and may be more or less favourable for them. Should an alternative food sources vegetation be planted and if so which species? The flow on effects will likely be gradual ecosystem change.

Management of the parks network into the future will require an adaptive management approach that plans for a range of future scenarios. Climate change adaptation is a key consideration in biodiversity, asset management planning and scientific studies for park terrestrial and aquatic ecosystems.

7. LEGISLATION AND KEY NATIONAL POLICIES

Regional parks are governed by a range of legislation that sets broad and sometimes specific parameters about how different park lands can be managed and developed, acquired or disposed of. They also influence levels of service by setting out a range of standards, regulations and processes that must be followed in asset provision and service delivery in regional parks. Key legislation with a short synopsis is listed below.

Local Government Act 2002 - sets out principles and consultation requirements for local authorities in performing their functions. The Act requires local authorities to consult before selling any park or part of a park that is not a reserve under the Reserves Act

1977. The Act also allows regional councils to apply for regional parks to be protected in perpetuity through an Order in Council. Section 149 authorises Greater Wellington to make bylaws governing the use of regional parks and forests, which ensures compliance with the rules set out in the PNP.

Reserves Act 1977 –provides for the acquisition of land for reserves, and the classification and management of reserves (including leases and licences). The Act requires Greater Wellington to prepare reserve management plans for parks held as reserves. The majority of Greater Wellington's parks classified under the Reserves Act are recreation reserves, with some scenic and local purpose reserve areas. Greater Wellington considers it best practice to prepare a plan that includes all land that contributes to the regional park network, whether held under the Reserves Act or other legislation.

Resource Management Act 1991 – The PNP must comply with regional and district plans prepared under the Resource Management Act. Greater Wellington parks are located across five districts (Wellington City, Porirua City, Hutt City, Upper Hutt City and Kāpiti Coast District Councils). The PNP must therefore comply with each of these district plans, as well as the five operative regional plans and the proposed Natural Resources Plan for the Wellington Region. For example, the PNP identifies protected and managed natural areas that have Significant Natural Area or Significant Ecological Area status under various district plans, such as Korokoro Valley and Dry Creek Bush in Belmont.

National Policy Statement for Freshwater Management (revised 2017) – This National Policy Statement sets out that freshwater quality must be maintained or improved in order to provide for the many ways water is valued by New Zealanders. As a policy statement prepared under the Resource Management Act, the National Policy Statement for Freshwater Management must be given effect to by the Council's regional plan. The Council's Whaitua Programme will progressively set water quality limits for all parts of the region. This will mean activities that affect water quality, including forestry, farming and urban land uses, must be managed to ensure the 'maintain and improve' test is met. As major land owners in some whaitua (e.g. Te Awarua-o-Porirua), parks planning and operations will need to deliver on water quality objectives, limits and methods identified in the regional plan.

Wellington Regional Water Board Act 1972 - sets out Greater Wellington's legal responsibilities and powers over the forest lands, enabling Greater Wellington to hold and manage lands for water supply purposes, forestry and recreation. Greater Wellington officers and rangers are empowered by the Act's bylaws to control activities in the forests. The Akatarawa and Pakuratahi Forests are held as potential future water collection areas under this Act. This means that protection of forest areas for water collection is the priority, when new proposals in these areas are considered.

Building Act 2004 - applies to the construction of new buildings as well as the alteration and demolition of existing buildings. In practical terms, this means that Greater Wellington must comply with the provisions in the Act when constructing, modifying or demolishing buildings within the parks network, for example rangers' houses, heritage structures, and farm and toilet buildings.

Biosecurity Act 1993 – provides for pest control strategies and defines the role and responsibilities of pest management agencies in the control of pests, the procedures to be followed, and how pest management is to be funded. Under the Act, Greater Wellington is empowered to exercise relevant enforcement and funding provisions to achieve the objectives of its Regional Pest Management Strategy 2018-2028. This legislation helps guides environmental management priorities across the Greater Wellington Regional Parks Network.

Health and Safety at Work Act 2015 - promotes that workers and other persons should be given the highest level of protection against harm to their health, safety, and welfare from work risks as is reasonably practicable. This legislation applies to the many volunteers who undertake activities across the Greater Wellington regional parks network. Under Section 19 of the Act, people and groups volunteering in parks on an ongoing or regular basis and undertaking work that is an integral part of the business must be treated the same as staff members with regard to health and safety.

Heritage New Zealand Pouhere Taonga Act 2014 - promotes the identification, protection, preservation, and conservation of the historical and cultural heritage of New Zealand. Development and activities in Greater Wellington parks take into account the requirements of this Act, such as protection of registered archaeological sites. Operationally an Accidental Discovery Protocol guides park maintenance work, such as trail earth works.

Appendix 1: Projected age structure in suburbs neighbouring regional parks

The following graphs show forecast population growth and decline across different age groups for each of the suburbs adjacent to the respective regional parks and forests in the Greater Wellington parks network.

Akatarawa Forest

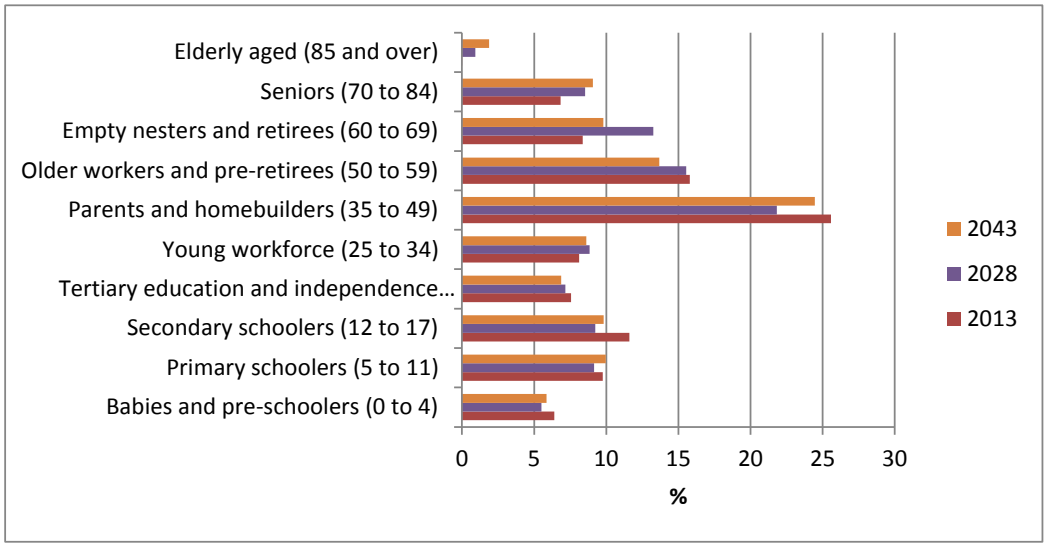


Figure 1. Te Marua forecast age structure

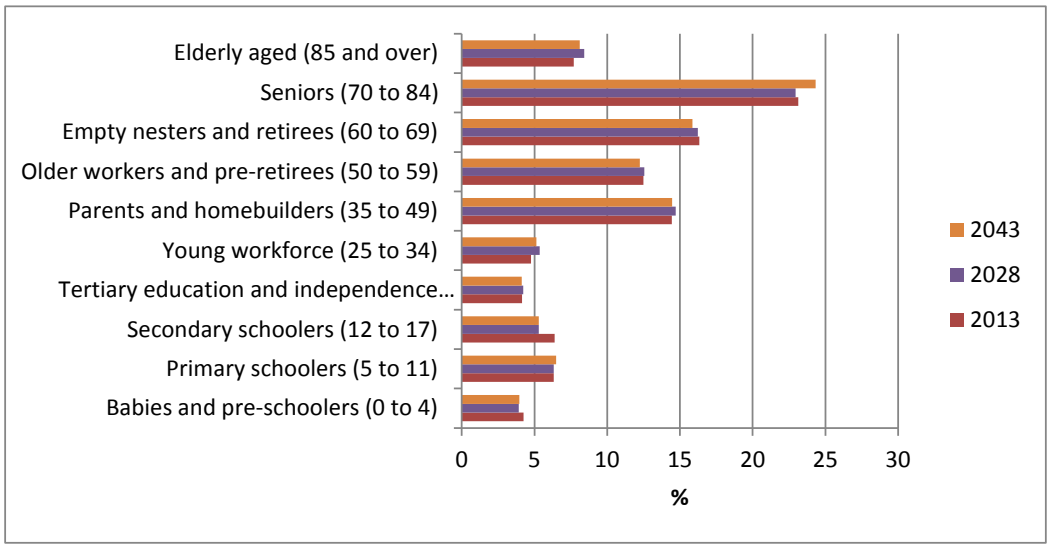


Figure 2. Waikanae-Reikorangi forecast age structure

The population surrounding the Akatarawa Forest are in the Hutt Valley and on the Kāpiti Coast. Key projected changes for the population around the Akatarawa Forest are more retirees on the Kāpiti Coast, with an increase in parents and homebuilders in the Hutt Valley by 2043.

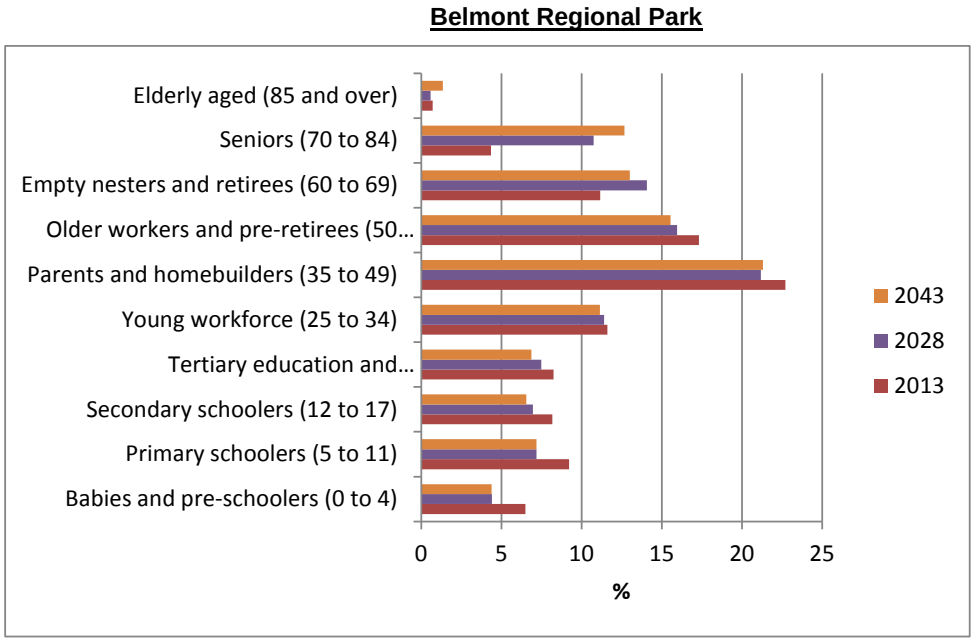


Figure 3. Belmont forecast age structure

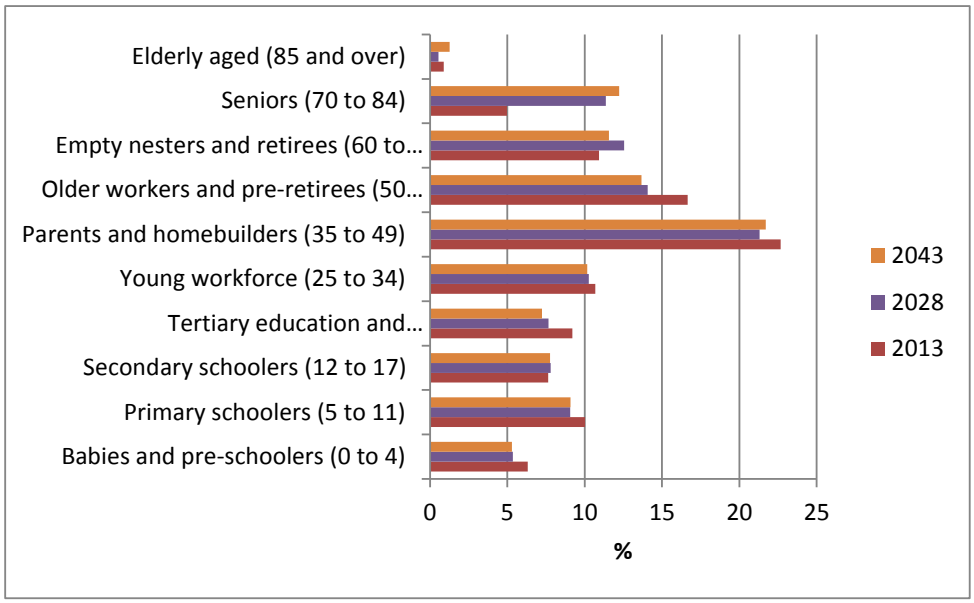


Figure 4. Normandale – Tirohanga forecast age structure

The key changes for the population closest to Belmont are similar to that of other parks; more empty nesters and retirees and seniors than there are in these areas now.

East Harbour Regional Park/ Wainuiomata Recreation Area

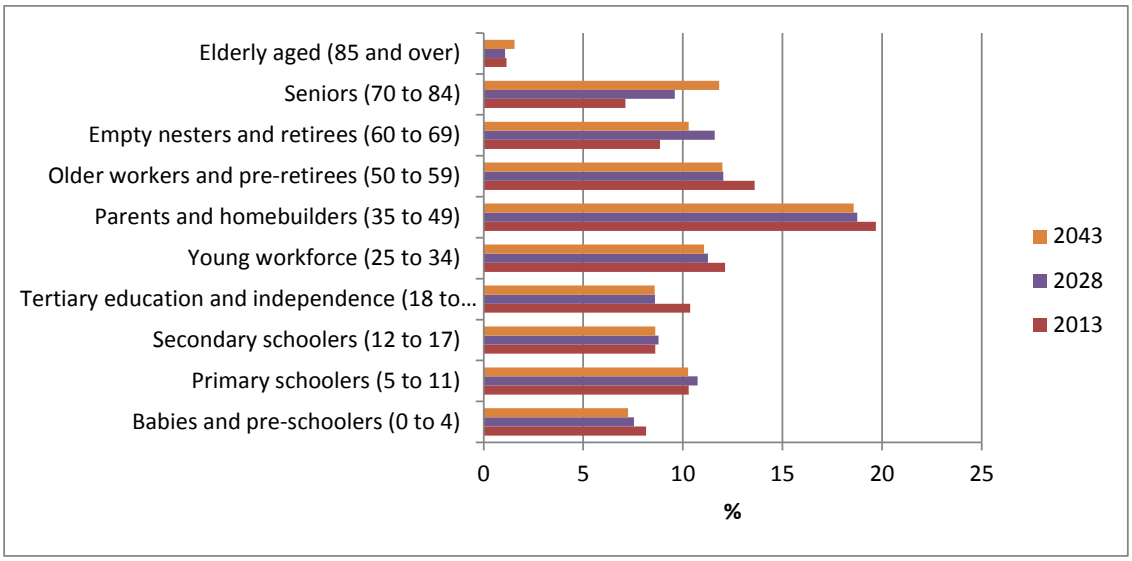


Figure 5. Homedale – Pencarrow forecast age structure

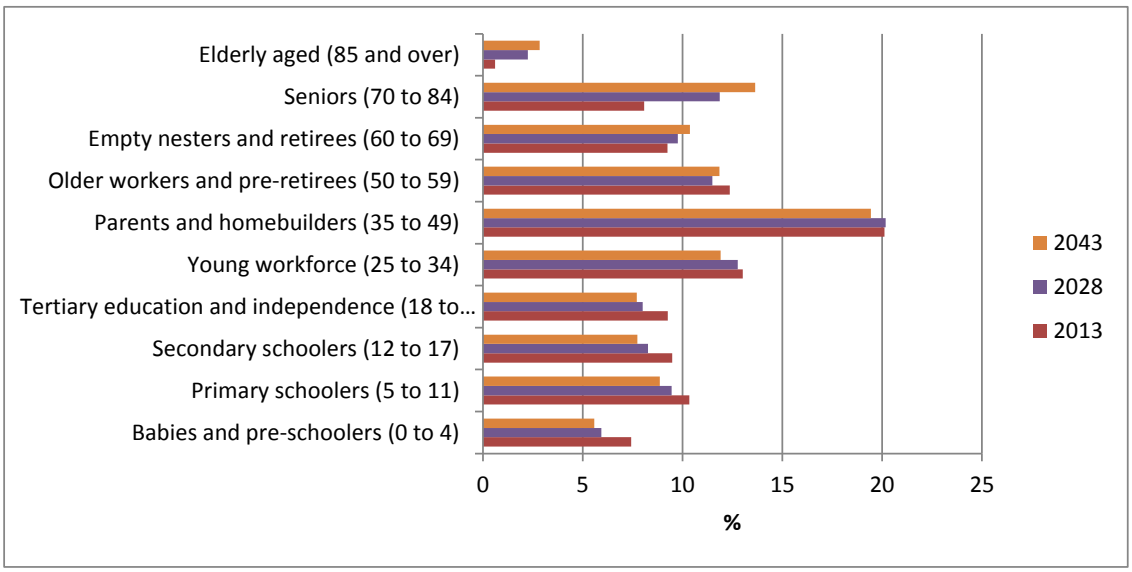


Figure 6. Parkway

The key changes for the population area closest to East Harbour and the Wainuiomata Recreation Area are again significantly more seniors and elderly people, more empty nesters and retirees who are likely to be active (in recreation and conservation activities) and less younger people and working aged people.

Pakuratahi Forest and Kaitoke Regional Park

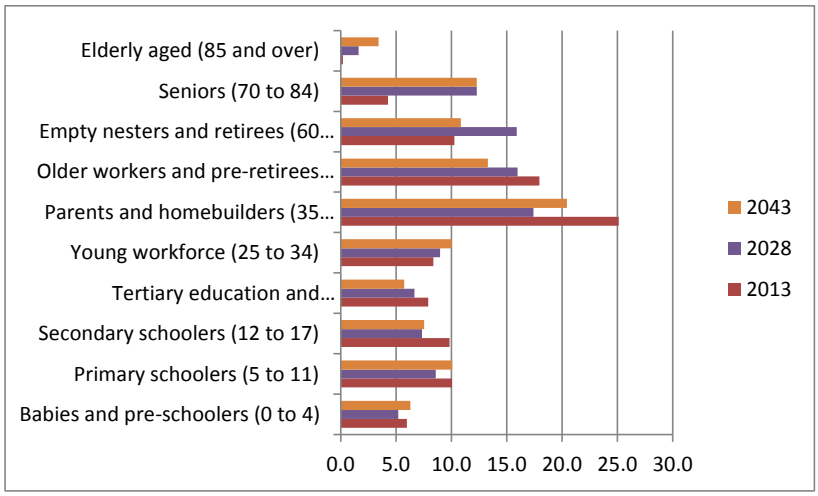


Figure 7. Akatarawa-Rimutaka-Kaitoke-Mangaroa-Moonshine Valley

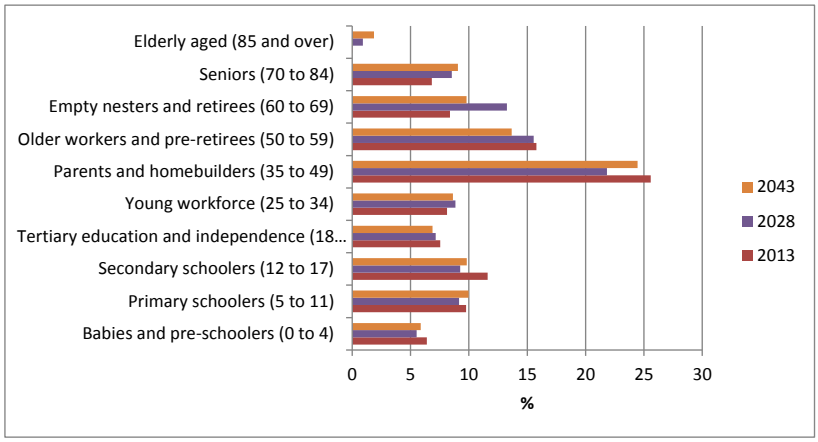


Figure 8. Te Marua

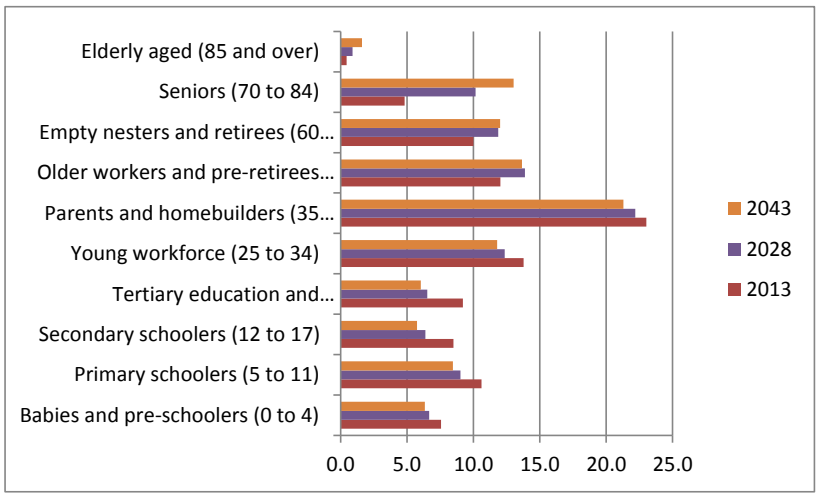


Figure 9. Maoribank

The projected population changes surrounding Kaitoke and Pakuratahi are similar to other parks with more empty nesters and retirees, more seniors and far fewer young families in the area.

Queen Elizabeth Park

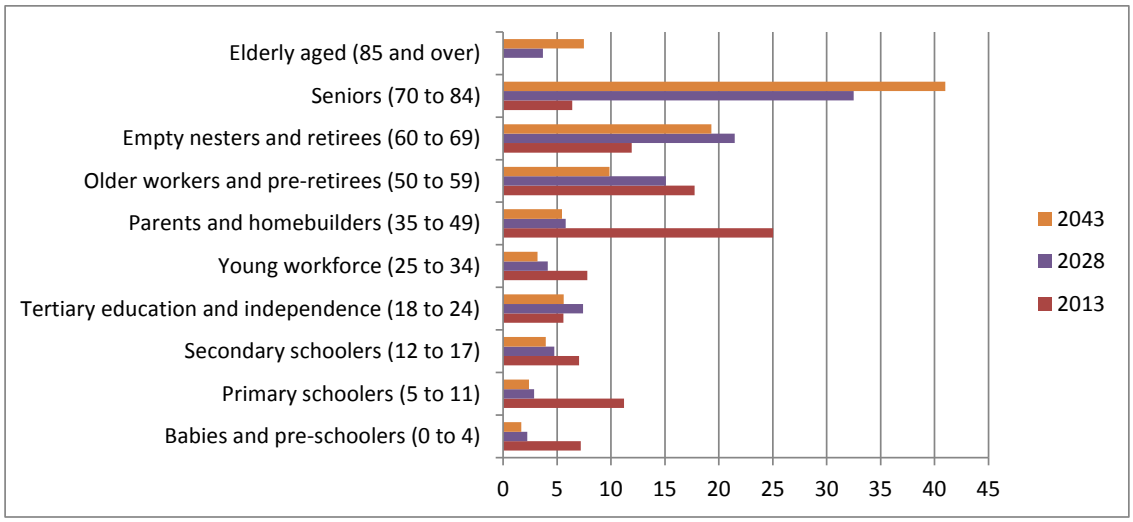


Figure 10. Paekākāriki

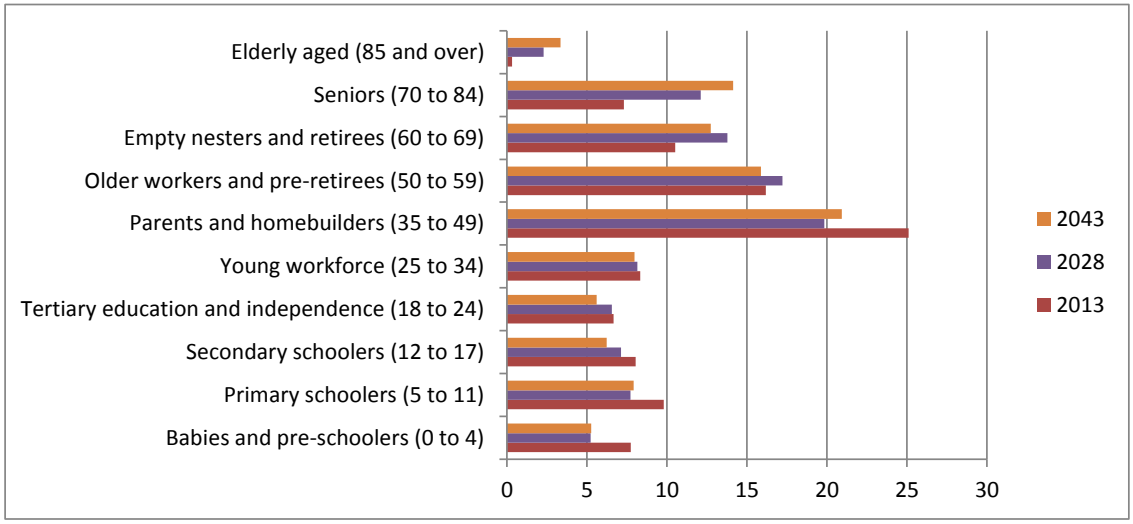


Figure 11. Raumati South

The Kāpiti coast has always been a destination for retirees and this area is predicted to see the retired, senior and elderly population increase even further over the next 25 years.

Appendix 2: Climate change projections in the Wellington region by Whaitua (catchment) area

Scientists have modelled the future climate of the Wellington region and the ***projections*** produced through that work can help stakeholders understand what impacts to prepare for. How much the climate will change will depend on how quickly the international community reduces overall global greenhouse gas emissions. No one knows exactly how quickly people around the world will be able to reduce their emissions and because of this ***uncertainty***, the projections are presented in the form of ***scenarios***. For example a 'continued high emissions scenario' provides projections for a world that undergoes a large amount of global warming (i.e. the worst case scenario), while a 'low emissions scenario' describes what could occur if emissions are reduced dramatically within the next twenty years.[23]

It is important to acknowledge that no matter what happens with global emissions in the future, climate change is already affecting the region and will continue to do so. This is because the greenhouse gas emissions produced by humans since the industrial revolution have already affected the global climate, causing temperatures to rise, which in turn generates the impacts of sea level rise, increased rainfall intensity, longer droughts in drought prone areas etc. There is nothing that can be done to stop the effects of the emissions that have already occurred, but the worst ***projected*** effects of climate change be avoided if emissions are reduced.

The tables below set out climate change projections for Greater Wellington's Regional Parks for 2040 and 2090. The projections for each park were developed based on the whaitua (catchment area) within which the park is located.

The tables set out the changes projected for the main variables of interest (variables are things like temperature, rainfall, sea level rise etc). The variables are presented in ranges, i.e. the numbers presented span a range of scenarios.

The variables tell us a story about the impacts, but the tables do not provide an exhaustive list of implications. Known implications that are relevant to each park are briefly noted, however it is important to acknowledge more analysis needs to be done to identify currently unknown implications. Determining these will require further research as they are likely to be context specific. I.e. they are based on the characteristics (topography, ecology, location of assets etc) and priorities specific to each park.

Te Awarua o Porirua whaitua *(catchment area)*

Parks within this Whaitua:

- Belmont Regional Park (western side)
- Battle Hill Farm Forest Park

Variable/period	2040	2090	Commentary
Average annual	+ 0.5C to 1C above	+ 1C to + 2.7C	Maximum warming in autumn and winter,

[23] Incomplete scientific knowledge about some of the processes governing the climate, and natural year-to-year variability, also contributes to uncertainty in projections for the future

Temperature	present (+ 1.2C to + 1.7 C above pre-industrial)	above present (+ 1.7C to + 3.4C above pre-industrial)	least in spring Note reference to above present versus pre-industrial: About 0.7C of warming has already happened from pre-industrial to present (1880-1909 compared to 1986-2005 reference periods). Uncertainty range: lower range for RCP[24]4.5 and upper range for RCP8.5
Average annual rainfall	0% to 5% increase	0% to 10% increase	There is a large uncertainty in the range of changes due to model differences and emission scenarios. Changes against RCP are not necessarily linear. Greater likelihood of positive changes in autumn, winter and spring.
Amount of rain falling during heavy rainfall days (> 99th percentile of daily rainfall)	0% to 15% increase	5% to 25% increase	Although the uncertainty in average rainfall range is high, extreme rainfall increases are more certain due to the increased amount of water vapour that the atmosphere can hold as it gets warmer (about 8% increase in saturation vapour per degree of warming)
Sea level rise	0.12 to 0.24 metres above present (0.38 to 0.5 metres above pre-industrial)	0.36 to 0.98 metres above present (0.62 to 1.24 metres above pre-industrial)	The projected sea level rise, based on International Panel on Climate Change (IPCC) fifth assessment report, may get significantly worse depending on the behaviour of the Antarctic ice shelves, so the upper limit is not a fixed physical limit. There is very high confidence in sea level rise projections, probably more so than any other variable. Note the difference between present and pre-industrial, as we have already had about 26cm of sea level rise so far. See the link below for inundation maps plotting for anywhere in the world: http://sealevel.climatecentral.org
Number of hot days (above 25C) per year	Between 0 and 10 days	Between 0 and 30 days	

[24] Representative Concentration Pathways (RCPs) are four greenhouse gas concentration (not emissions) trajectories adopted by the International Panel on Climate Change for its fifth Assessment Report (AR5) in 2014.

	increase	increase	
Number of frost nights (below 0C) per year	Between 0 and 5 days reduction	Between 0 and 15 days reduction	
Change in the intensity of wind during windy days (> 99th percentile of daily mean)	1% to 2% increase	1% to 3% increase	
Change in annual number of windy days	2 to 4 days increase	2 to 10 days increase	
Change in annual potential evapotranspiration deficit (mm)	Increase between 60 and 100 mm	Increase between 60 and 120 mm	Measures drought intensity
Change in rivers mean annual low flow discharge (MAL)	Decrease up to 40%	Decrease up to 40%	Measures water shortage in the catchments
Change in rivers mean annual flood discharge (MAF)	Increase up to 40%	Increase up to 80%	Measures flood potential in the catchments
Changes in number of days of very high and extreme forest fire danger	50% to 100% increase	100% to 150% increase	These figures are given by IPCC model averages. Individual models can show much higher increases of up to 700%
Implications for Park Management, Assets and Activities	Increased flood intensity Increased coastal inundation (some areas to become permanently inundated) Increased erosion Reduced soil fertility Decreased water quality Groundwater quality and availability pressures Salt water intrusion Increased pressure on water storage Biodiversity losses Increased pests such as wasps and rodents Ocean acidification Decline in fish population		

	Increased wildfire Increased allergies (e.g. pollen)

Wellington Harbour & Hutt Valley Whaitua *(catchment area)*

Parks within this Whaitua:

- Belmont Regional Park (eastern side)
- Kaitoke Regional Park
- Pakuratahi Forest Park
- East Harbour Regional park
- Akatawara Forest Park
- Wainuiomata Recreation Area

Variable/period	2040	2090	Commentary
Average annual Temperature	+ 0.5C to 1C above present (+ 1.2C to + 1.7 C above pre-industrial)	+ 1C to + 2.5C above present (+ 1.7C to + 3.2C above pre-industrial)	Maximum warming in summer and autumn, least in spring and winter Note reference to above present versus pre-industrial: About 0.7C of warming has already happened from pre-industrial to present (1880-1909 compared to 1986-2005 reference periods). Uncertainty range: lower range for RCP4.5 and upper range for RCP8.5
Average annual rainfall	5% decrease to 10% increase	5% decrease to 10% increase	There is a large uncertainty in the range of changes due to model differences and emission scenarios. Changes against RCP are not necessarily linear. Greater likelihood of positive changes in autumn and winter.
Amount of rain falling during heavy rainfall days (> 99th percentile of daily rainfall)	5% to 15% increase	5% to 30% increase	Although the uncertainty in average rainfall range is high, extreme rainfall increases are more certain due to the increased amount of water vapour that the atmosphere can hold as it gets warmer (about 8% increase in saturation vapour per degree of warming)
Number of hot days (above 25C) per year	Between 0 and 10 days increase	Between 0 and 40 days increase	
Number of frost	Between 0	Between 0	

nights (below 0C) per year	and 5 days reduction	and 10 days reduction	
Change in the intensity of wind during windy days (> 99th percentile of daily mean)	1% to 2% increase	1% to 4% increase	
Change in annual number of windy days	2 to 6 days increase	2 to 12 days increase	
Change in rivers mean annual low flow discharge (MAL)	Decrease up to 40%	Decrease up to 40%	Measures water shortage in the catchments
Change in rivers mean annual flood discharge (MAF)	Increase up to 40%	Increase up to 100%	Measures flood potential in the catchments
Changes in number of days of very high and extreme forest fire danger	50% to 100% increase	100% to 150% increase	These figures are given by IPCC model averages. Individual models can show much higher increases of up to 700%
Implications for Park Management, Assets and Activities	Increased flood intensity Increased coastal inundation (some areas will become permanently inundated) Increased erosion Reduced soil fertility Decreased water quality Groundwater quality and availability pressures Saltwater intrusion Increased pressure on water storage Biodiversity losses Increased pests such as wasps and rodents Ocean acidification Decline in fish population Increased wildfire Increased allergies (e.g., pollen)		

Kāpiti Coast Whaitua (catchment area)

Parks within this Whaitua:

- Queen Elizabeth II Park

Variable/period	2040	2090	Commentary
Average annual Temperature	+ 0.5C to 1C above present (+ 1.2C to + 1.7 C above pre-industrial)	+ 1C to + 2.7C above present (+ 1.7C to + 3.4C above pre-industrial)	Maximum warming in autumn and winter, least in spring Note reference to above present versus pre-industrial: About 0.7C of warming has already happened from pre-industrial to present (1880-1909 compared to 1986-2005 reference periods). Uncertainty range: lower range for RCP4.5 and upper range for RCP8.5
Average annual rainfall	0% to 5% increase	0% to 10% increase	There is a large uncertainty in the range of changes due to model differences and emission scenarios. Changes against RCP are not necessarily linear. Greater likelihood of positive changes in autumn, winter and spring.
Amount of rain falling during heavy rainfall days (> 99th percentile of daily rainfall)	0% to 10% increase	0% to 15% increase	Although the uncertainty in average rainfall range is high, extreme rainfall increases are more certain due to the increased amount of water vapour that the atmosphere can hold as it gets warmer (about 8% increase in saturation vapour per degree of warming)
Sea level rise	0.12 to 0.24 metres above present (0.38 to 0.5 metres above pre-industrial)	0.36 to 0.98 metres above present (0.62 to 1.24 metres above pre-industrial)	The projected sea level rise (based on IPCC AR5) may get significantly worse depending on the behaviour of the Antarctic ice shelves, so the upper limit is not a fixed physical limit. There is very high confidence in sea level rise projections, probably more so than any other variable. Note the difference between present and pre-industrial, as we have already had about 26cm of sea level rise so far. More regular storm events in the fragile coastal environment may also mean faster and more significant coastal retreat. See the link below for inundation maps plotting for anywhere in the world:

			http://sealevel.climatecentral.org
Number of hot days (above 25C) per year	Between 5 and 10 days increase	Between 5 and 50 days increase	
Number of frost nights (below 0C) per year	Between 0 and 5 days reduction	Between 0 and 15 days reduction	
Change in the intensity of wind during windy days (> 99th percentile of daily mean)	0% to 2% increase	0% to 3% increase	
Change in annual number of windy days	0 to 4 days increase	0 to 6 days increase	
Change in rivers mean annual low flow discharge (MAL)	Decrease up to 40%	Decrease up to 40%	Measures water shortage in the catchments
Change in rivers mean annual flood discharge (MAF)	Between 20% decrease and 60% increase depending on catchment	Increase up to 60%	Measures flood potential in the catchments
Changes in number of days of very high and extreme forest fire danger	50% to 100% increase	100% to 150% increase	These figures are given by IPCC model averages. Individual models can show much higher increases of up to 700%
Implications for Parks Management, Assets and Activities	Possible future relocation of the QEP coastal track, Paekākāriki road end facilities (toilets, roads, carpark, picnic areas) and Ranger House. Relocation of other essential low lying infrastructure Increased flood intensity Increased coastal inundation (some areas will become permanently inundated) Increased erosion Reduced soil fertility Decreased water quality		

	Groundwater quality and availability pressures Saltwater intrusion Increased pressure on water storage Biodiversity losses Increased pests such as wasps and rodents Ocean acidification Decline in fish population Increased wildfire Increased allergies (e.g., pollen)

Appendix 3: Greater Wellington regional parks - Intercept Surveys 2011-2015

Introduction

This appendix presents the findings of seven visitor intercept surveys administered by the Greater Wellington Parks team between 2011 and 2015. The intercept surveys consist of a questionnaire completed by park visitors and corresponding data collected by the surveyor. There are five main subject areas covered by the survey: demographic information, access to parks, activities, frequency of use and feedback. The appendix presents the findings for individual parks and all parks (the average result for 7 parks) under these subject areas. A visitor intercept survey was not done at the Wainuiomata Recreation Area.

Methodology

The park intercept surveys consisted of a questionnaire administered by a surveyor at various locations in each park. The surveyor also recorded for each respondent: the mode of transport, dogs present or not and number of people in the group (or in the vehicle). The questionnaire was replicated for all seven parks with only minor changes over the five years they were implemented. The subject areas covered by the questionnaire:

- Demographics (age, ethnicity, where the respondent lives)
- Access to the park and who with
- Range of activities by visitors
- The frequency of visits to the park and length of stay
- Feedback about the park.

The aim of each survey was to build a detailed picture of visitor demographics, visitor patterns of use, types of activities undertaken and frequency of use. Park visitors were also asked what they liked about the park and ideas for how the park experience could be improved. Some of the questions related to the group as a whole (e.g., age, where the respondent lives) while other questions were directed only to the randomly selected visitor/interviewee.

Seven surveys are included in this report - one from each park. The surveys took place between 2011 and 2015, during the summer months and over several days. The number of survey respondents varies across the parks and there were 2,323 total responses from the seven surveys.

Table 1 provides the total respondents by park and year. Where the sample size is small (230 or less) the findings in this report for those parks are more indicative than representative. For those parks where sample size was greater than 500, the margin of error is much less and therefore results are much closer to the overall population. This also applies to the category where results are summarised across all parks.

Table 1: The year parks were surveyed and the sample size

Park	Total respondents	Survey year
Battle Hill	146	2012
Belmont	320	2011
Kaitoke	282	2012
Queen Elizabeth Park (QEP)	537	2012
Pakuratahi	206	2015
East Harbour	636	2013
Akatarawa	196	2015
Total	2323	

Survey findings

Demographic information

The majority of park visitors were New Zealand European (71%) with the next two largest groups - Other European (13%) and NZ Maori (6%). **Figure 1** shows the ethnicity of park visitors by park.

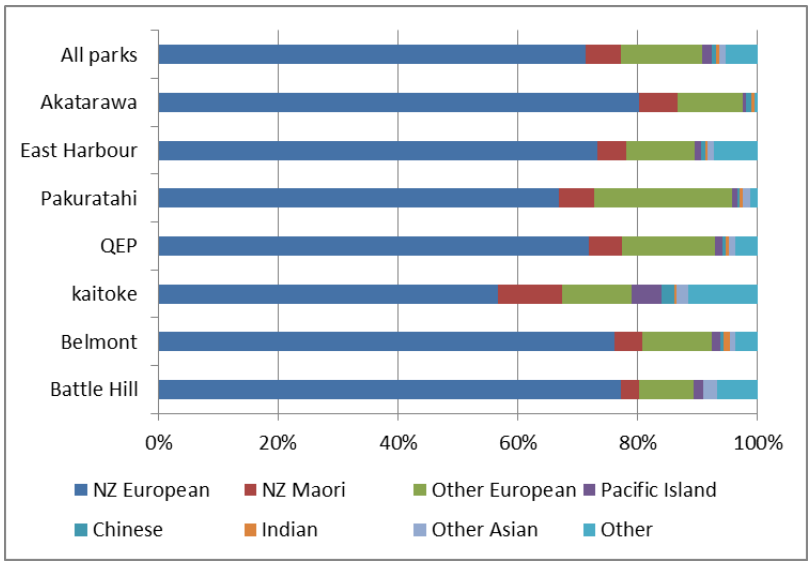


Figure 1: Ethnicity of visitor sample

Age

Visitors to the parks (the average for all 7 parks) are represented across all age groups. The largest group are those aged between 30 to 49 years (32%) followed by 50 to 69 years (25%) and under 16 years (22%). **Figure 2** shows the visitor age range for each park and all seven parks.

Visitors to Battle Hill and Belmont parks tend to be in the younger age groups with approximately 50% are below 30 years of age. Other parks have an older visitor profile such as Pakuratahi and East Harbour where at least 40% are aged 50 and above.

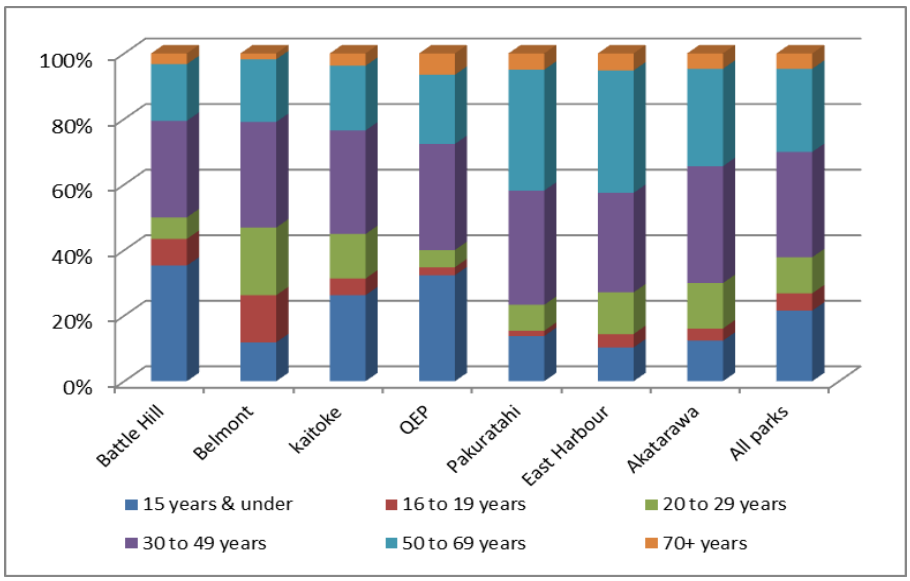
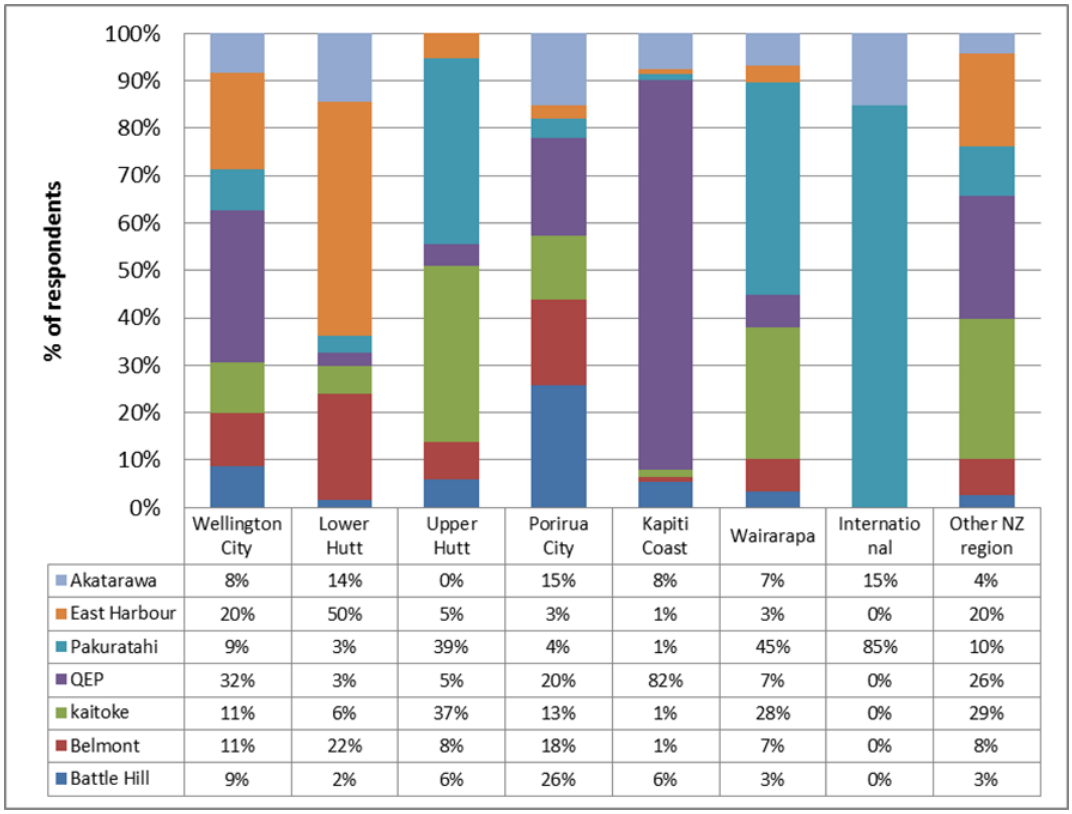


Figure 2: Age of Park visitors

Where do visitors live?

Those surveyed were asked where everyone in the group was from. Across all parks the areas with the highest representation in the survey were Lower Hutt 35%, Wellington City 21% and 13% Kāpiti Coast. **Figure 3** shows the local council area (or territorial authority) where visitors live by park. Visitors from outside of NZ and from other NZ regions were reported separately.



	Wellington City	Lower Hutt	Upper Hutt	Porirua City	Kapiti Coast	Wairarapa	Internatio nal	Other NZ region
Akatarawa	8%	14%	0%	15%	8%	7%	15%	4%
East Harbour	20%	50%	5%	3%	1%	3%	0%	20%
Pakuratahi	9%	3%	39%	4%	1%	45%	85%	10%
QEP	32%	3%	5%	20%	82%	7%	0%	26%
kaitoke	11%	6%	37%	13%	1%	28%	0%	29%
Belmont	11%	22%	8%	18%	1%	7%	0%	8%
Battle Hill	9%	2%	6%	26%	6%	3%	0%	3%

Figure 3: Local council area or region where visitors live by park

Wellington City visitors were more likely to visit East Harbour and QEP parks. Lower Hutt residents favoured their closest parks Belmont and East Harbour. Proximity was also a factor for Kāpiti coast residents who were most likely to be at QEP (82%) which is one of their closest parks. Porirua visitors were most likely to visit Battle Hill Park (26%) but were prepared to travel across the region to other parks. International visitors were recorded at Kaitoke and Akatarawa. Cars were the main mode of transport (59%) used to access the regional parks shown in **Figure 4,** with walkers and runners next likely at 26%.

Travelling to the park and who do you go with?

Mode of transport

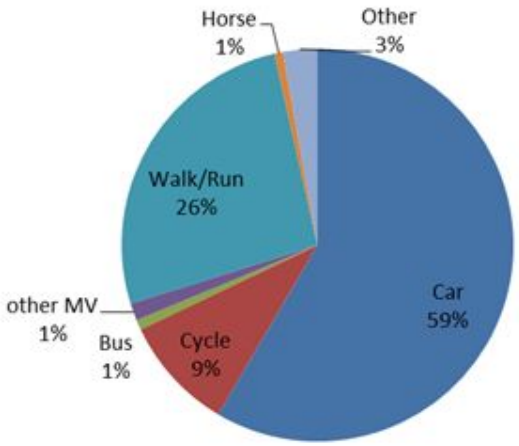


Figure 4: Mode of transport to access Parks

Table 2 shows main mode according to each park. Visitors to Kaitoke and Battle Hill were highly likely to use a car with 87% and 80% respectively using this mode. Walking or running was the main mode for visitors to East Harbour (57%) and also popular for QEP 23%. Cycling as a mode of transport was highest at Akatarawa (17%) and Belmont (16%).

Table 2: Mode of transport by Park

Transport Mode	Battle Hill	Belmont	kaitoke	QEP	Pakuratahi	East Harbour	Akatarawa	All parks
Car	80%	58%	87%	60%	73%	35%	60%	58%
Cycle	1%	16%	1%	13%	13%	5%	17%	9%
Bus	1%	0%	5%	0%	0%	0%	0%	1%
other MV	4%	3%	3%	2%	0%	0%	0%	1%
Walk/Run	3%	18%	2%	23%	9%	57%	18%	26%
Horse	2%	2%	0%	0%	1%	0%	1%	1%
Motorcycle	1%	0%	0%	0%	0%	0%	2%	0%
Other	8%	3%	1%	2%	3%	3%	2%	3%

Dogs in parks

Over all parks 21% of those surveyed had dogs. Pakuratahi had the highest proportion with dogs at 30% and Akatarawa is least likely with 15% of visitors with dogs. Dogs are not allowed in Battle Hill.

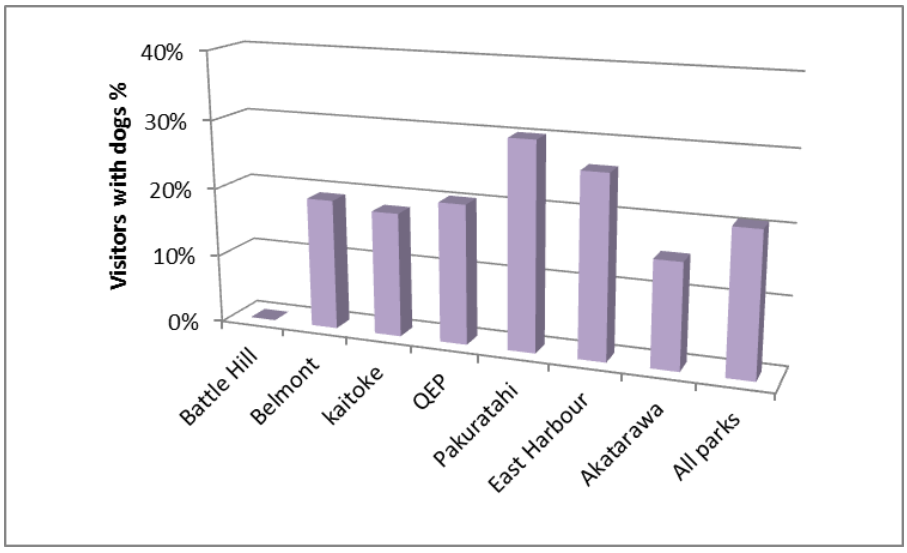


Figure 5: Percentage of visitors with dogs by park

Who do you go to the park with?

Typically across all seven parks, people visited either on their own (26%) or with family (26%), with 18% going with spouse/partner and 16% with friends. At specific parks family groups were more likely such as Battle Hill (45%) and QEP (36%) and people visiting on their own were more likely at East Harbour (33%) and Belmont (35%). These results are shown in **figure 6**.

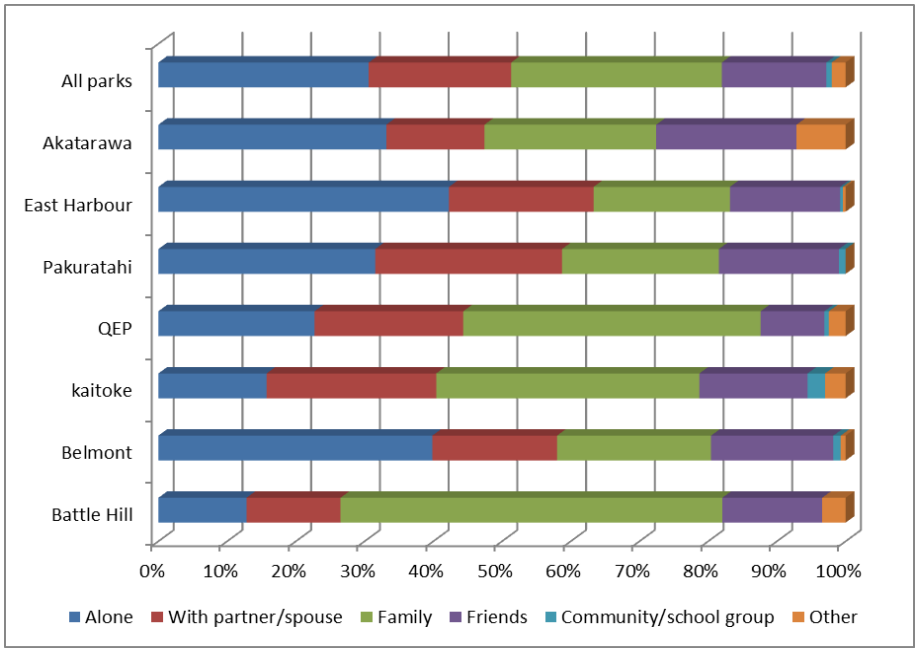


Figure 6: Who do you visit the park with?

Activities at the Park

Respondents were asked to provide several activities that they did at the park, table 3 shows the results by park. The most popular activity across all seven parks was walking (45%), followed by mountain biking (14%). 70% of those visiting East Harbour were walking and this was also a popular activity at Akatarawa (46%). For all those participating in mountain biking the largest group were in Belmont (26%) and QEP (21%). For those interested in picnics and barbeques Kaitoke was the preferred location (38%). Runners were most likely to be visiting Belmont (37%) and East Harbour (38%).

Some parks had specific activities associated with them and these were evident in the survey results. Battle Hill results showed that a high proportion of visitors were involved in horse related activities 41%, Akatarawa, Belmont and Pakuratahi had relatively high participation in mountain biking 34%, 21% & 32% respectively. Kayaking or rafting was an activity popular at Kaitoke (12%).

Table 3: Reported activities at each park

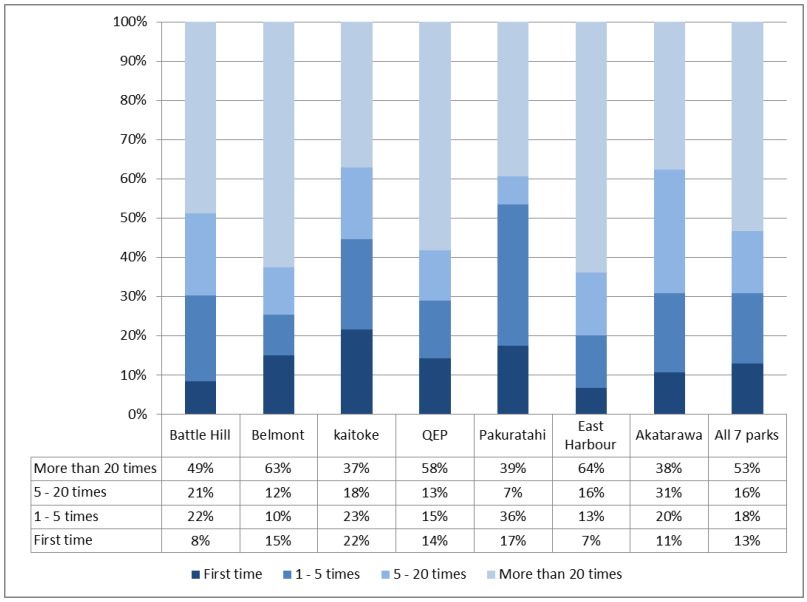
Activities	Battle Hill	Belmont	Kaitoke	QEP	Pakuratahi	East Harbour	Akatarawa	All 7 parks
Walk or walked dog	17%	42%	37%	40%	47%	70%	46%	45%
Running	1%	14%	1%	3%	6%	12%	4%	6%
Tramping	2%	5%	2%	0%	5%	3%	2%	2%
Horse activity	41%	2%	0%	3%	2%	0%	2%	4%
Mountain biking	2%	21%	1%	12%	32%	9%	34%	14%
Picnic/BBQ	14%	6%	18%	7%	5%	1%	0%	7%
Camping/rock	7%	2%	9%	5%	0%	2%	0%	4%

climbing								
Swimming/lifesaving	7%	0%	3%	10%	0%	1%	3%	4%
Kayaking/Rafting	0%	1%	12%	1%	0%	0%	0%	2%
Wildlife/Fishing	2%	0%	1%	1%	0%	2%	1%	1%
Other	8%	6%	15%	16%	4%	1%	6%	9%
tramways	0%	0%	0%	4%	0%	0%	0%	1%

Time spent at the park and frequency of visits

Figure 7 shows the frequency of visits for each park. Just over half the park visitors surveyed (53%) were high users of the park; having visited the park more than 20 times. A small proportion were first time users 11%. Similar proportions had visited 1 to 5 times (18%) and between 5 and 20 times (16%)[25] .

The visitors who were high users tended to be in the middle of the age range (30 to 69 years) 66%. These visitors mainly arrive by car (50%) but a large proportion walk or run (34%) to the park. The park with the highest proportion of visitors returning over 20 times was East Harbour with 64% high users closely followed by Belmont (63%).



	Battle Hill	Belmont	kaitoke	QEP	Pakuratahi	East Harbour	Akatarawa	All 7 parks
More than 20 times	49%	63%	37%	58%	39%	64%	38%	53%
5 - 20 times	21%	12%	18%	13%	7%	16%	31%	16%
1 - 5 times	22%	10%	23%	15%	36%	13%	20%	18%
First time	8%	15%	22%	14%	17%	7%	11%	13%

Figure 7: Frequency of visits to the Park

Figure 8 shows the length of visiting time at the park. The length of stay averaged over all 7 parks was between one and four hours (51% of visitors) with visits of less than one hour (35%) and greater than 4 hours (13%). The length of stay at the park for the high user group was roughly divided into quick visits (less than an hour), 40% and up to four hours, 50%.

Battle Hill was atypical, with a small proportion of visitors staying less than an hour (16%) and a high proportion staying longer than 4 hours (41%).

[25] Those survey respondents who did not answer the question were excluded from calculations.

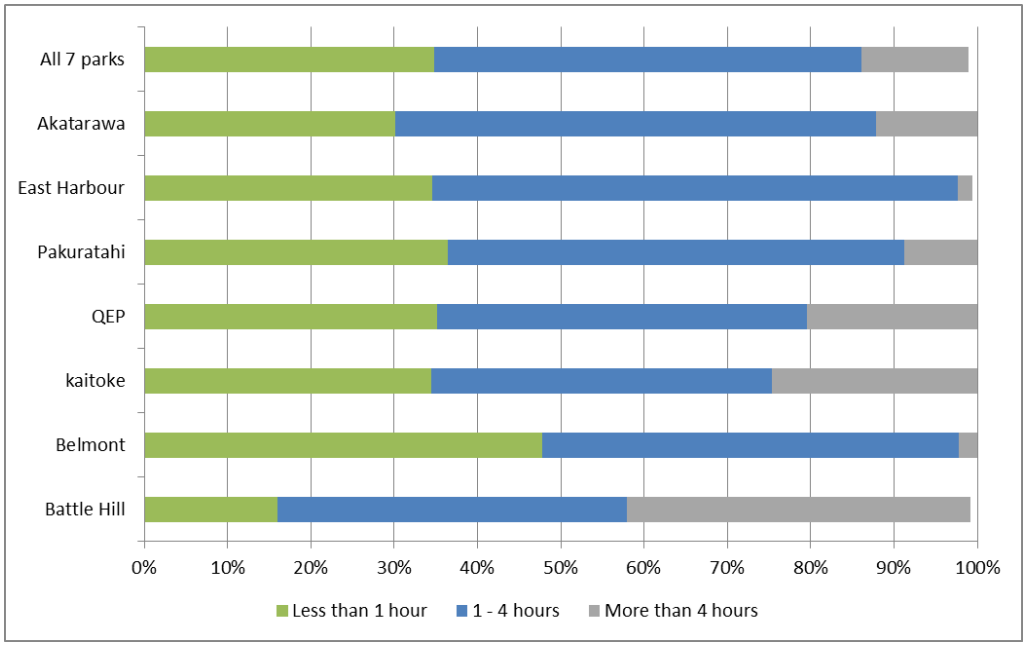


Figure 8: Length of visit to the park

Feedback about the park

What visitors most liked about the park

The survey questionnaire asked visitors what they liked most about the park; any comments made were matched to a list of categories compiled from previous survey results. **Figure 9** shows the results averaged for all seven parks. The most liked feature of the park was *What you can do* (17%) followed by *Flora and fauna* and *Landscape,* both on 14%.

Figure 9: What visitors liked most about the park (average for all 7 parks)

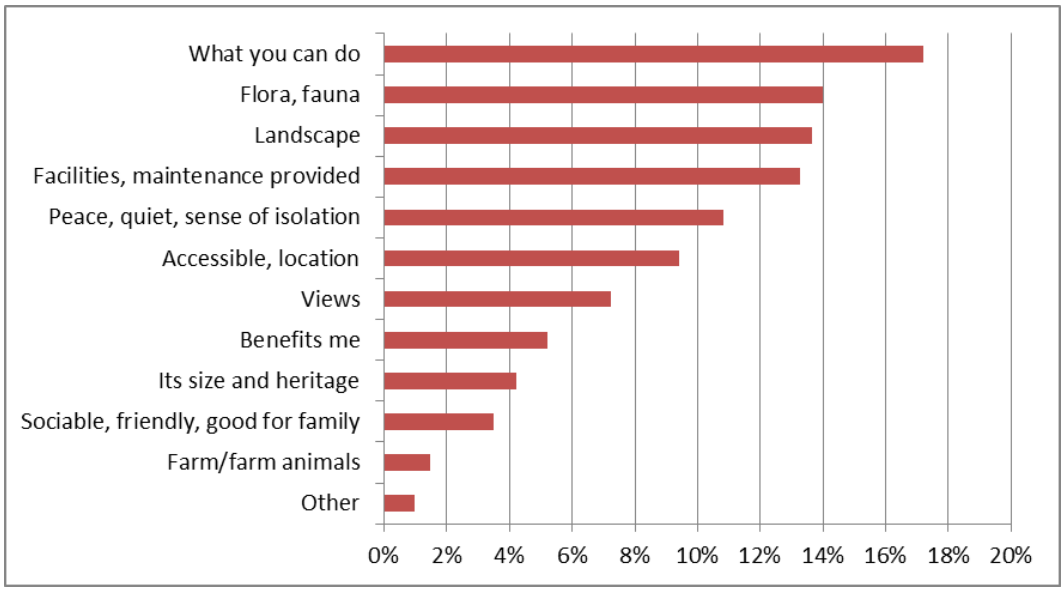


Table 4 below shows the feedback results for each park (What did you like about the park). The response category with the highest percentage (for each park) is shaded in blue. At Kaitoke visitors appreciated the landscape most and then flora and fauna. At Pakuratahi 25% appreciated the facilities and maintenance. Flora and fauna were most

appreciated at East Harbour (24%) and Belmont visitors were most appreciative of the Landscape (17%).

Table 4: What visitors liked about the park

	Belmont	Battle Hill	Kaitoke	QEP	Pakuratahi	East Harbour	Akatarawa
Landscape	17%	9%	21%	19%	10%	8%	8%
Facilities, maintenance provided	12%	14%	12%	10%	25%	9%	19%
What you can do	13%	22%	12%	23%	14%	17%	20%
Accessible, location	14%	12%	8%	8%	5%	12%	6%
Views	8%	2%	2%	5%	10%	12%	8%
Peace, quiet, sense of isolation	13%	10%	14%	9%	10%	10%	12%
Flora, fauna	14%	8%	18%	8%	13%	24%	8%
Sociable, friendly, good for family	2%	4%	3%	6%	5%	1%	4%
For the region, free to visit	1%	2%	2%	1%	0%	0%	1%
Benefits me	4%	2%	3%	3%	5%	7%	12%
Its size	1%	11%	4%	5%	0%	0%	1%
Heritage	1%	2%	0%	3%	4%	0%	0%
Farm/farm animals	1%	4%	0%	1%	0%	0%	0%

Feedback for park managers

Respondents were asked if they had any feedback for park managers. These comments were summarised into the categories in **Figure 10** below. Feedback on improving facilities (e.g., to remove thistles, provide rubbish bins, more signs) had the highest proportion of responses received (24%). This was closely followed by positive feedback (e.g., great tracks, like signage, good job) on the park tracks and facilities, 22%.

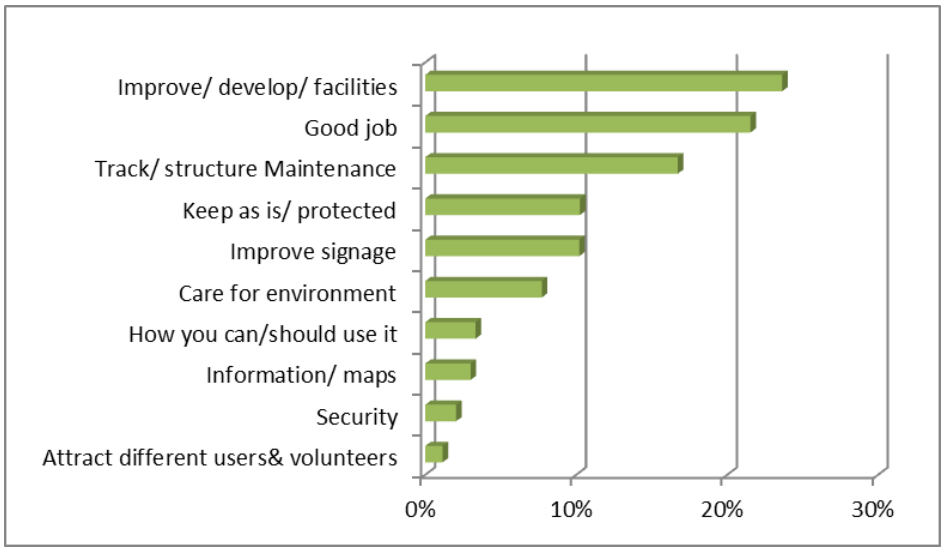


Figure 10: Feedback for park managers

Table 5 shows the feedback response categories by park. Aside from the comments mentioned above, other comments featured for individual parks for example, *Improve the signage* was in the top three comments for Belmont and Akatarawa. *Care for the environment* was the most frequent feedback for visitors at Pakuratahi. The response category with the highest percentage (for each park) is shaded in blue.

Table 5: Feedback to managers on park service

Feedback	Belmont	Battle Hill	Kaitoke	QEP	Pakuratahi	East Harbour	Akatarawa
Improve signage	17%	5%	7%	5%	15%	6%	20%
Track/ structure Maintenance	17%	14%	7%	14%	9%	26%	17%
Security	2%	1%	2%	2%	0%	1%	7%
Improve/ develop/ facilities	20%	30%	29%	33%	21%	19%	18%
Information/ maps	6%	4%	3%	2%	2%	2%	3%
How you can/should use it	5%	2%	2%	0%	0%	8%	0%
Care for environment	6%	1%	1%	2%	22%	10%	8%
Keep as is/ protected	7%	6%	6%	10%	20%	8%	17%
Involve volunteers more	1%	0%	0%	0%	0%	1%	0%
Good job	19%	38%	42%	30%	7%	18%	8%
Attract different users	1%	0%	0%	1%	4%	1%	1%

Attachment 3 to Report 18.53

FARMING IN REGIONAL PARKS

A supporting document for the Parks Network Plan Review 2018

greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

CONTENTS

SUMMARY

Greater Wellington Regional Council (Greater Wellington) manages a network of regional parks that offer a range of recreational opportunities for both the region's residents and visitors. Our parks contain large areas of native vegetation, including regenerating vegetation, which provide important habitat for indigenous species, contribute to high quality fresh water, and provide lush sheltered places for trail-based recreation activities. Many of our parks also have large expanses of open grassland, which are generally managed by stock grazing. Farm animals are part of the rural character of Battle Hill, Belmont, Kaitoke, Baring Head parks, and areas of Queen Elizabeth Park. In Whitireia Park (managed by a joint Ngāti Toa and Greater Wellington Park Board with its own management plan), open grassy areas are managed by grass slashing.

Greater Wellington uses farming in parks for a combination of reasons including:

- As a cost effective method of maintaining large open spaces in the parks
- Maintaining landscape areas celebrated for their open space qualities
- Maintaining the historic heritage values of farming the land
- Education for park visitors to learn about food and sustainable farming
- Reducing the threat of fire to neighbouring residential and bushland areas.

For many visitors and members of the neighbouring communities of parks, farming is viewed as a positive attribute of the rural landscape. However, others have expressed concerns about the impacts of farming on the natural environment.

Concerns include:

- The use of 'recreation reserves' for farming, and seasonal or longer term restrictions on access to public land as a result
- Pest plant and animal control, and in particular spraying methods and the use of agrichemicals to control pest plants
- Possible impacts on soil and runoff of sediment and nutrients to freshwater
- More recent changes in the way areas of park are farmed e.g., pasture cropping and higher stock numbers.

The appropriateness of farming as a broad scale management activity in regional parks has also been questioned. In recent times, farming practices have changed significantly. Informed by scientific practice and technological advances farmers are undertaking their day to day activities differently to the past. In some parks or areas of park this change in farming practice is sometimes perceived as an 'intensification' of farming and has been questioned for public land.

Greater Wellington has developed this "Farming in Regional Parks" report to outline the 'why' and 'how' for farming activities taking place in open space areas of some of our regional parks, and explore some of the issues, challenges and possible future opportunities. Our aim is to shed some more light on farming in parks and detail the management context in which farming activities take place.

'Farming in Regional Parks' is a supporting document for the Parks Network Plan review. The Parks Network Plan (PNP) is the management plan eight regional parks. The PNP is developed under the Reserves Act 1977, which requires management plans to be kept up to date. The current PNP was finalised in 2011 and an overall review to create a new plan has commenced.

1. INTRODUCTION

Greater Wellington manages a network of regional parks and forests for your use and enjoyment, and for the preservation of important natural and cultural values. The network is managed with the support of mana whenua, community groups and others.

Our regional parks and forests provide for a wide range of outdoor recreational activities that enable both Wellington region residents and visitors to connect with nature and enjoy being outdoors. These areas offer diverse landscapes ranging from lush native bush to open grasslands, farmland, rugged coastal headlands and long sandy beaches. Trail-based activities are the most popular – walking, dog walking, running, mountain biking and horse riding. Picnics and camping are also popular, along with hunting and 4-wheel driving in some parks.

Park management activities and rules help to ensure that the different types of activities can take place with minimal impact on the environment and on other park users.

Throughout this document, we refer to regional parks and forests as parks.

1.1 Purpose of this document

Farming and grazing has a long history in our parks. While farming and grazing largely takes place with a high level of community acceptance, over the past few years some community members and groups have questioned the appropriateness of farming and the manner in which it is undertaken. Throughout this document, the terms farming and grazing are used interchangeably.

The purpose of this document is to discuss farming activities in parks in detail, and explore issues and opportunities for consideration in the review of the Parks Network Plan.

We discuss:

- Sustainability and environmental issues
- How farm practices are changing and improving
- Alternatives to farming and grazing
- The legislation governing management of our parks
- How our own policies and management plans control and direct farming practices.

We also provide details about individual parks where farming and grazing aids landscape and vegetation management, and we explore other methods we use to protect significant natural values. All the parks where farming is permitted are discussed in this document. These parks are:

- Battle Hill Farm Forest Park (Battle Hill)
- Belmont Regional Park (Belmont)
- Baring Head, East Harbour Regional Park (Baring Head)
- Kaitoke Regional Park (Kaitoke)
- Pakuratahi Regional Park (Pakuratahi)
- Queen Elizabeth Park (QEP).

There is a particular focus on QEP because recent changes in the type of farming activities carried out there have been of interest and concern for the community.

1.2 The Parks Network Plan

The current plan

The Parks Network Plan outlines the overall vision, management principles, policies and rules for use and development of our parks. It also identifies a range of actions for future works such as creating trail connections where there are gaps, revealing park stories through heritage interpretation and improving amenity areas or making parks more accessible.

Council approved the PNP in 2011 and it has had three amendments since then (in 2012, 2014 and 2016) so it remains relatively current. However, the directions of other new policy documents such as the Greater Wellington proposed Natural Resources Plan need to be reflected in the plan.

Reviewing the plan

A review is now underway. The first part of the process is to consult with our partners, stakeholders and the community to find out what is important now, and what we should change in the PNP. It is important we hear from people with a variety of viewpoints because, while parks are provided for the whole community to use and enjoy, park visitors have different needs and preferences for activities, facilities and services.

Once completed and approved by Council, the updated PNP will guide management of our park network for the next 10 years, with future PNP amendments made as the need arises.

Have your say

This review is your chance to have your say on how Greater Wellington manages the parks in the future. Please email parksplanning@gw.govt.nz or use the feedback form on the Greater Wellington website.

2. WHY FARM IN REGIONAL PARKS?

Farming fulfils a number of different roles in our region's parks. These vary from park to park, but in general farming takes places for one or more of the following reasons.

- **Cost effective land management** – farming provides a cost-effective method of managing land and maintaining open space values in parks. Note that alternative options are explored in section seven. All revenue gained through farming offsets the cost of maintenance, protection and enhancement of other areas of the park, and can support additional works.
- The **land is not currently needed for recreation purposes** – for reserves classified as 'recreation reserves' under the Reserves Act 1977. If demand is not apparent for recreation uses, the land may be farmed for management purposes.
- To **maintain significant landscapes** – in areas such as Baring Head and the open hill tops of Belmont, farming maintains landscapes which are considered significant and are valued by the community for their open grassy spaces.
- To **maintain particular cultural heritage values** – in many of the parks the land was historically farmed by both Māori and European settlers and managing the land by farming is still considered to be important by various groups. In QEP,

farming is one of its major heritage themes and has been identified as a significant point of interest.

- To **reduce the threat of fire** – local fire hazards must be managed in parks. In QEP, which borders two urban areas, this is particularly important. Farming provides a cost-effective way to manage vegetation and therefore reduce fire risk. Without farming, other activities would be required to reduce this risk. Such activities could include regular grass mowing, extensive weed control combined with seasonal hay and silage making, planting of 'green fire breaks' and the creation and maintenance of wide fire breaks near residential areas.
- **For education purposes** – farming in parks provides a unique opportunity for the public to observe working farms and learn about sustainable farming practices. Many people tell us they appreciate seeing these practices. Being able to experience a sustainable and working farm is a great way to build connections within our region between urban and rural areas.

2.1 Visitor feedback on farming and parks

Greater Wellington conducts surveys with park visitors on an ongoing basis via telephone surveys and face to face interviews with park visitors. Survey results are summarised in our PNP review supporting document 'External influences on parks'. This document is on the Greater Wellington website.

From these surveys we have feedback from parks visitors about their experiences of different parks.

Intercept surveys (surveys of visitors while they are in a park) look at all areas of the park experience, but for the purposes of this document, only those comments focused on farming and grazing are discussed.

In **QEP** people commented that what they liked the most was the tram, farm animals and how peaceful the park was. Many commented that they liked the open spaces and scenery. Some commented that they liked the combination of features in the park, including trails and farming.

In **Battle Hill** people commented that it was good to have public access to a historical site and farm. They noted that it was a big asset to urban dwellers to be able to see a working farm. They also noted the combination of farming and native bush, and like that the park served multiple purposes, e.g., equestrian facilities, farming and trails. They commented that children like the sheep and horses.

Belmont received positive comments around the quality of the tracks and that it is good to have access to the farmland. The farm animals are a definite positive for children. Visitors also noted the tranquil nature of the park.

While these surveys don't tell everyone's stories or perspectives around farming in the parks, they do show that there is an appreciation for farming among visitors, and that the farms form part of the identity and personality of the parks themselves.

Lambing season at Baring Head, East Harbour Regional Park. Park visitors often report that they enjoy seeing farm animals in parks (via Greater Wellington's visitor research programme).

3. STATUTORY FRAMEWORK

Greater Wellington's park management is guided by legislation, which details how we can carry out farming in the parks. The most relevant legislation or acts are the:

- Local Government Act 2002 (LGA)
- Reserves Act 1977
- Conservation Act 1987
- Wellington Regional Water Board Act 1972 (Water Board Act)

The Resource Management Act 1991 (RMA) and other acts apply to regional park activities such as proposed earthworks and freshwater activities. Table 1 shows which park is subject to which Act, and what farming activities are carried out in each.

Table 1: What legislation guides the management of each park's farming activities

Park	Statutes	Reserve Act Classification (where applicable)	Primary purpose	Farming related activities
Battle Hill Farm Forest Park	Local Government Act and Reserves Act	A small area of scenic reserve	Recreation, farming, forestry	Sheep, cattle, deer and horse grazing
Belmont Regional Park	Reserves Act, Local Government Act and Conservation Act	Recreation reserve	Recreation activities	Sheep, cattle and horse grazing
Baring Head, East Harbour Regional Park	Reserves Act	Scenic and Recreation reserves	Scenic values, recreation	Sheep and cattle grazing
Kaitoke Regional Park	Wellington Regional Water Board Act and Local Government Act	NA	Future water collection area, recreation, water supply and forestry	Sheep and cattle grazing
Pakuratahi Forest	Wellington Regional Water Board Act	NA	Future water collection area, recreation, water supply and forestry	Sheep and cattle grazing
Queen Elizabeth Park	Reserves Act and Conservation Act	Recreation Reserve	Recreation activities	Sheep, cattle and horse grazing

The legislation is extensive and complex. For the purposes of this document, only sections relating to farming and grazing are discussed.

3.1 Local Government Act 2002

The LGA sets out principles and consultation requirements for local authorities in performing their functions.

The only specific provisions relating to parks concern restrictions on their disposal. Part 7 (section 139) requires local authorities to consult before selling any park or part of a park not gazetted as reserve under the Reserves Act. 'Disposal and selling' includes granting a lease that has the effect of excluding or substantially interfering with the public's access to the park for more than six months.

The LGA also allows regional councils to apply for regional parks to be reserved through an Order in Council, and to create bylaws for managing reserves, as is the case with Battle Hill Farm Forest Park.

3.2 Reserves Act 1977

The Reserves Act provides for the purchase of land for reserves, and the classification and management of reserves (including leases and licensing). The majority of our parks classified under the Reserves Act are 'recreation reserves', with some 'scenic' and 'local purpose reserves'.

Some specific sections of the Reserve Act 1977 are worth looking at more closely.

Section 16(8) provides that once a reserve is classified for a specific purpose, *'each reserve shall be held and administered for the purpose or purposes for which it is classified and for no other purpose*'.

Section 40 is similar and requires the administering body to manage each reserve according to the Reserves Act and to ensure the use and enjoyment of it '*for the purpose for which it is classified.*'

Four parks contain areas of reserve managed under the Reserves Act:

- Belmont Regional Park
- Baring Head (part of East Harbour Regional Park)
- Queen Elizabeth Park
- Battle Hill.

Their classifications under the Reserves Act are largely 'scenic' and 'recreation' reserve.

Recreation reserves

The Reserves Act defines recreation reserves as being "*for the purpose of providing areas for the recreation and sporting activities and the physical welfare and enjoyment of the public, and for the protection of the natural environment and beauty of the countryside, with emphasis on the retention of open spaces and on outdoor recreational activities, including recreational tracks in the countryside"* (section 17(1)).

With regard to this general purpose, every recreation reserve must be administered according to section 17(2) of the Reserves Act. This means we have to:

- Maintain public access, and any restrictions need to be considered necessary for the protection and general well-being of the reserve and protection of the public using it (section 17(2)(a))
- Manage and protect indigenous flora or fauna as long as this is compatible with the primary purpose as a recreation reserve (section 17(2) (b))
- Conserve those qualities of the reserve which contribute to the pleasantness, harmony, and cohesion of the natural environment and to the better use and enjoyment of the reserve (section 17(2) (c))
- Maintain its value as a soil, water and conservation area as long as this is compatible with the primary purpose as a recreation reserve (section 17(2) (d)).

Farming and grazing is covered in Sections 53, 72, 73 and 74 of the Act. Section 53 of the Reserves Act relates to powers (other than leasing) in respect of recreation reserves. As the administrator of the reserve, Greater Wellington can:

- *"Enclose the reserve, or any part thereof, which it may at any time decide is necessary or desirable— … to farm or graze or afforest as a part of a development, improvement, or management programme,—and may lay down or renew in grass, or plant or improve, or, as the case may be, farm or graze or afforest, the reserve or that part" (section 53 (1)(a)(ii))*

- *"Prohibit from time to time the public from entering or encroaching on any part of the reserve so laid down, renewed in grass, planted, improved, grazed, farmed, or afforested" (section 53 (1)(b))*

Section 73 of the Reserves Act allows the park to be leased for farming or grazing if that is something that Greater Wellington sees as necessary, or if the reserve is not being used for the purpose it was classified, i.e., recreation.

- *"Where any recreation reserve or any part of such a reserve is not for the time being required for the purpose for which it was classified ….. or where the administering body of any recreation reserve has decided under section 53(1)(a)(ii) that it is* ***necessary or desirable to farm or graze the reserve*** *or any part thereof, leases of the reserve or of any part thereof may be granted by the administering body" (section 73 (1)).*

Similarly, section 72 of the Reserves Act provides for farming of a recreation reserve by another person.

- *"Where all or any part of any recreation reserve … is not for the time being required for the purpose specified in its classification, or where the administering body of a recreation reserve has decided under section 53(1)(a)(ii) that it is necessary or desirable to farm or graze any part of the reserve as part of a development, improvement, or management programme, the administering body may enter into an agreement or lease with the Minister providing for the carrying out by another person or body of farming or grazing operations, including the development and improvement of the land on behalf of the administering body, on such terms and conditions (including the repayment of development costs) as may be agreed upon between the Minister and the administering body" (section 72 (1)).*

Section 74 provides for licences (i.e., a right to occupy) to be granted to occupy reserves for the purpose of grazing or other similar purposes.

- *"Where, in the opinion of the Minister or, as the case may be, the administering body or the Commissioner, it is necessary or desirable for the management of the reserve for the purpose for which it is classified, licences to occupy any recreation, historic, scenic, scientific, government purpose, or local purpose reserve, or any part of any such reserve, may be granted for the following purposes:*
  (a) grazing, gardening, or other similar purposes (section 74 (2)(a)).

Section 74 also puts time limits on these licences, and states they are restricted to a maximum of 10 years (section 74(4)).

Section 59A of the Reserves Act is also relevant and it allows a concession to be granted for any reserve held by the Crown (including those administered by Greater Wellington). A 'concession' is defined as a lease, licence, permit or easement granted under section 59A of the Reserves Act. Any such concession must be granted in accordance with Part 3B of the Conservation Act 1987.

Scenic reserves

The RA defines scenic reserves as being *"for the purpose of protecting and preserving in perpetuity for their intrinsic worth and for the benefit, enjoyment, and use of the public, suitable areas possessing such qualities of scenic interest, beauty, or natural features or landscapes that their protection and preservation are desirable in the public interest" and (section 19(1)(b)): "for the purpose of providing, in appropriate circumstances, suitable areas which by development and the introduction of flora, whether indigenous or exotic, will become of such scenic interest or beauty that their development, protection, and preservation are desirable in the public interest." (section 19(1)(a)).*

The Reserves Act sets out that reserves classified as a scenic reserve must protect and save the indigenous flora and fauna, ecological associations, natural environment and beauty of the park. Exotic flora and fauna should also be exterminated as much as possible (section 19(2)(a)).

In terms of access in scenic reserves, the Reserves Act sets out that the public should have freedom of entry and access. Any restrictions should only happen

when it is necessary for the protection of either the reserve or the public using it (section 19(2)(c)).

The Reserves Act also states that where there are historical, archaeological, geological, biological or other scientific features present in the reserve, then those features will be managed and protected, provided that protection is compatible with the primary purpose of the reserve as a scenic reserve (section 19(2)(d)).

Section 55 of the Reserves Act relates to powers (other than leasing) in respect of scenic reserves. Greater Wellington, as the administrator of scenic reserves, can:

- *"with the prior consent of the Minister and having regard to the conservation of natural vegetation and features, enclose any open parts of the reserve which the administering body may at any time decide it is necessary or desirable to lay down or renew in grass or graze:" (section 55(2)(a)*
- *"prohibit the public from entering or encroaching on any part so laid down, renewed, or grazed" (section 55(2)(b)).*

Section 56 of the Reserves Act relates to leasing power in scenic reserves and says that the Greater Wellington can grant leases and licences when the licence is necessary to *"enable the public to obtain the benefit and enjoyment of the reserve"* (section 56(1)(b)).

3.3 Conservation Act 1987

If the Department of Conservation owns part of park (such as at Belmont) or all of it (as with QEP), and Greater Wellington manages it, we are also required to meet the expectations set out in the Conservation Act 1987. To grant a licence to farm or graze in those parks, applications must comply with Part 3B section 17R of that Act.

3.4 Wellington Regional Water Board Act 1972

The Wellington Regional Water Board Act 1972 sets out Greater Wellington's legal responsibilities and powers over forest lands.

Part 3 section 53 of the 1972 Act covers licences for forestry areas for grazing and '*other purposes of a similar nature*'. It states that from time to time the Board may grant, in respect of forestry areas, licences for grazing and other purposes of a similar nature. These licences cannot be granted for more than 21 years but any licence may contain one right of renewal for a term not longer than the original term. The parks that are covered by the Wellington Regional Water Board Act are Kaitoke and Pakuratahi.

3.5 Other relevant Acts

Greater Wellington must also comply with the:

- Biosecurity Act 1993
- Resource Management Act 1991
- Historic Places Act 1993
- Health and Safety in Employment Act 1992
- Crown Minerals Act 1991
- Treaty of Waitangi (State Enterprise) Act 1998
- Freshwater Fisheries Act 1983.

These can affect policy decisions and day-to-day operational activities.

4. POLICY DIRECTIONS FOR PARK MANAGEMENT

Greater Wellington has a number of plans, policies and statements that guide the parks' management. Some are statutory plans, others are strategic plans, guidelines and operating plans and procedures. While many guiding documents address multiple aspects of park management e.g., Parks Operational Plans, for the purposes of this document, only sections relating to farming and grazing have been discussed. Figure 2 shows the hierarchy of legislation, plans, policies and statements and illustrates the management context for undertaking farming activities in regional parks.

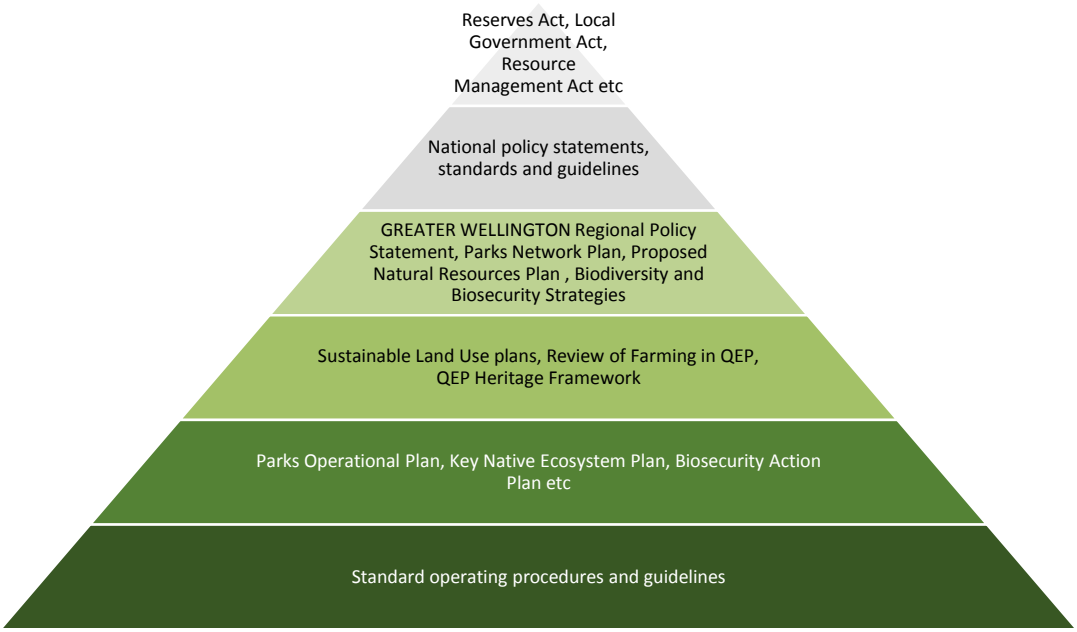


Figure 2: The hierarchy of policy for the parks' management spans legislation to Greater Wellington standard operating procedures.

4.1 Parks Network Plan

The Parks Network Plan (PNP) sets out the direction for managing the regional parks and forests in the Wellington Region, and provides a framework for addressing issues common to these areas and managing them in a comprehensive and consistent way. It is the management plan for eight of our parks.

The general management framework (section 3) contains the first relevant sections. It states that we will:

- Manage farms sustainably. This section states that farming will be undertaken when the farm "*contributes to integrated catchment management, maintains landscape settings, provides access for recreational activities and follows best practice principles*" (section 3.3(3))
- Manage all activities in parks to make sure what makes parks a special place for visitors are not affected. This covers off restricted activities such as large events and lease on land, but also mentions specifically "*farming and forestry will be used to provide an income stream, manage rural settings and recreation opportunities and settings, where appropriate*" (section 3.3(16)).

Section 4 contains general management outcomes and policies. This section states that we will:

- Remove introduced or exotic plants, except where they "… *are necessary for viable farming or plantation forestry activities*" (section 4.1.3 (policy 13)(e))
- Actively control pest plants and animals to assist the recovery of native species and ecosystems. These policies address the need to find a balance between maintaining pest and plant control, and the potential adverse side effects of proposed methods, efficiency and cost effectiveness. They also look at preventing new infestations, measuring the effectiveness of each process, and keeping a close watch on negative effects in human health, the environment and non-target species (section 4.1.3 (polices 14-18))
- Protect landscape and geological features from inappropriate development and use. Assessments of new activities need to consider the impact on the park and park values (section 4.2 (policies 23-25))
- Manage modified ecosystems (e.g., areas used for farming and forestry) as good examples of sustainable management (section 4.4 (outcome 7))
- Protect soil resources by minimising use of chemicals, minimising erosion and retiring land with significant risk of erosion (section 4.4.1 (policy 35)(a-c))
- Ensure farming practices minimise sediment and nutrient discharge and downstream effects on catchments by encouraging indigenous vegetation along riparian margins and using setbacks when replanting riparian areas (section 4.4.1 (policy 36)(a-e))
- Allow pastoral farming "*where it contributes to the public use, enjoyment and education potential of regional parks, remains reasonably accessible to the public, is managed with the protection of the natural and cultural resources of the park in mind, doesn't negatively affect significant ecosystems or historical and cultural heritage systems and is in accordance with good land management practices and animal care*" (section 4.4.1 (policy 37)(a-e)).

The PNP covers eight regional parks, of which six have farming or grazing activities taking place via licence agreements.

4.2 Regional Policy Statement for the Wellington Region

The Regional Policy Statement (RPS) sets out the framework and priorities for resource management in the Wellington region. The RMA requires all regional councils to produce a RPS for their region and review it every 10 years.

The RPS identifies the regionally significant policies for natural and physical resources and sets out what needs to be achieved in the form of objectives. Regional and district plans are required to give effect or to consider specific policies.

The RPS also sets out a series of methods that Greater Wellington and its partners will undertake, and how Greater Wellington will monitor the RPS and see how the anticipated results of its policies are being achieved.

4.3 Proposed Natural Resources Plan

The proposed Natural Resources Plan for the Wellington Region is produced by Greater Wellington in accordance with the RMA. It sets out the objectives, policies, rules and other methods for people and organisations that use the region's resources.

- The **objectives** identify resource management focuses for air, land, water and coastal resources in the region. They state what Greater Wellington is aiming

to achieve and give direction and justification for the policies, rules and other methods.

- The **policies** explain how we are to achieve the objectives and give directions on how resources are directed to achieving these.
- The **rules** set out those activities that are permitted, those that require resource consent and those that are prohibited.
- The **other methods** are complementary to the rules, setting out non-regulatory means of achieving the objectives. These methods include the provision of information and guidance, resource investigations and similar programmes.

When it becomes operative, the proposed Natural Resources Plan (pNRP) will replace the five existing regional plans (Regional Coastal Plan, Regional Air Quality Management Plan, Regional Freshwater Plan, Regional Plan for Discharges to Land and Regional Soil Plan).

Particularly relevant to the management of our regional parks are new provisions in the proposed Natural Resources Plan providing for the protection and active management of wetlands and waterbodies.

4.4 Key Native Ecosystem Plans

New Zealand's indigenous biodiversity continues to decline nationally and in the Wellington region. This decline is caused mostly by predation, invasive species and loss of ecosystems and habitats through human resource use and development.

Active management of these threats is required to protect indigenous biodiversity. Regional councils have a responsibility to maintain indigenous biodiversity and protect significant vegetation and habitats of threatened species, under the RMA.

The Greater Wellington Biodiversity Strategy's vision is, "*healthy ecosystems thrive in the Wellington Region and provided habitat for native biodiversity*" and one of its goals is that high value biodiversity areas are protected.

KNE plans are operational plans for biodiversity work.

To achieve this vision and the goal of healthy ecosystems, the Key Native Ecosystem programme seeks to protect some of the best examples of ecosystem types in the Wellington region by managing, reducing, or removing threats. Through this programme, sites with the highest biodiversity values are identified as key native ecosystems, and prioritised for management. Active management of these sites can involve control of ecological weeds and pest animals, fencing to exclude stock, restoration planting and helping landowners to protect these areas legally. We assess the ecological values and threats within each key native ecosystem and develop a plan to protect and manage its biodiversity.

Sustainable Land Use Plans are operational plans for farmed areas of parks

4.5 Sustainable Land Use Plans/Farm Environment Plans

Greater Wellington has produced Sustainable Land Use Plans for several parks. They provide an overview of issues and identify actions for sustainable management of land within particular parks.

They contain an assessment of the park's land and other natural resources. Land management zones are identified for areas of particular land capability and value,

and guidance provided on what specific areas of land should be used for. Actions in these plans are compatible with the PNP as well as other Greater Wellington polices, plans and initiatives such as Key Native Ecosystem Plans.

The objectives of the Sustainable Land Use Management plans are:

- Sustainable management of the park's natural resources, in accordance with the PNP, for the benefit of current and future generations
- Achieving a holistic approach to land management as part of total catchment management
- Providing clear and practical guidance for the park's operational planning.

Sustainable land use plans are being phased out and will be replaced 'Farm Environment Plans' with a focus on sustainability and drawing on directions of Greater Wellington's Proposed Natural Resources Plan.

5. ISSUES AND OPPORTUNITIES

In six of our parks, farming is a day-to-day activity. **In each park the type of farming and reason for it is unique**. The parks have their own heritage values, topography, ecosystems and legal status.

This section looks at the key issues around farming and grazing for the community, the environment and Greater Wellington. It outlines the issues then explores options to address them. Some actions are underway, and some are proposed.

5.1 What is going on in day to day farming activities?

Park visitors sometimes report that they see the landscape changing or activities being undertaken that they are unsure of or concerned about.

By its nature, farming activities respond to seasonal changes:

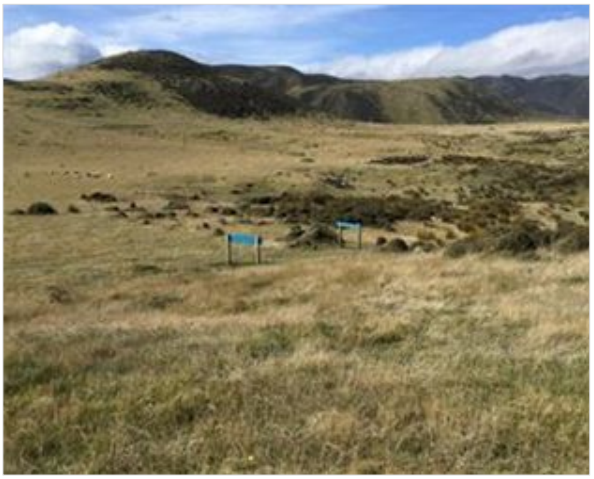
- Paddocks are left and cut for hay or silage
- Animals are bred, stored or finished for market
- Fertiliser is applied to make up for the nutrients taken up by animals
- Paddocks are sprayed and sown with new grass or feed crops such as rape or plantain
- Annual crops are cut or grazed by stock
- The colours of the landscape change throughout the year.

There are often many interesting things going on in farmed areas of parks, so there are opportunities to provide more information about these activities for park visitors.

This interpretation panel is at Wellington Zoo in the 'farm yard' area, More farming related interpretation is planned in parks to explain more about what's going on in day to day farm operations.

Full access to recreation reserves Some people are concerned that areas of our parks are closed to public access because of farming operations -they feel unnecessarily excluded from parts of a recreation reserve. **Generally, access restrictions are there**

to protect public safety, enable farming activities such as stock movements to proceed without hindrance or to protect animal welfare (e.g., seasonal closures for lambing).



The wide open grassy landscape at Baring Head is maintained with stock grazing and park visitors can roam freely across the landscape or follow trails to key sites such as lookouts. There are no annual closures for lambing or calving here.

The Reserves Act states that when a park contains farmland, Greater Wellington is allowed to "*prohibit from time to time the public from entering or encroaching on any part of the reserve so laid down, renewed in grass, planted, improved, grazed, farmed, or afforested*".

However, Greater Wellington also has to ensure that access to the public is maintained "*subject to such conditions and restrictions as the administering body considers being necessary for the protection and general well-being of the reserve and protection of the public using it***.**"

The specific licence agreements, the size of the farmed area and the kind of livestock being farmed can also affect the restriction of access. For example, parks with breeding sheep or cattle will have temporary closures of specified areas for lambing and calving from August to October.

Public access restrictions in parks are considered in the individual park-focused section below.

The Reserves Act states:

"*Where any recreation reserve or any part of such a reserve is* ***not for the time being required for the purpose for which it was classified*** *….. or where the administering body of any recreation reserve has decided under section 53(1)(a)(ii) that it is* ***necessary or desirable to farm or graze the reserve*** *or any part thereof, leases of the reserve or of any part thereof may be granted by the administering body.*"

In QEP public access has been restricted year-round in parts of the northern park for safety reasons. This is because of frequent stock movements and farm machinery use. There are plans however for a new circuit trail through the north eastern area of park which is no longer farmed and will be gradually restored to native vegetation with McLean Trust funds.

This allows us to monitor and be aware of the public's changing needs and desires for use and access. We use short-term (less than 10 years) farming licences that allow for flexible use of parks and changes when needed. Consultation processes such as this PNP review are a great opportunity for the community to have a say in the planning process, and identify their needs and desires for particular parks.

Plans to improve access

There are a number of efforts to improve access where issues have been raised, particularly in QEP.

The current PNP provides for the development of a multi-use track from Paekākāriki to Raumati South. This would require retirement of farmland in the northern part of the park. The QEP Sustainable Land Use Plan recommends that this track be created to allow access through this area without affecting the operations of the farm. This was also mentioned and recommended in the QEP

Farming Review[1]. When Te Ara o Whareroa trail was built in 2015, great care was taken to develop the trail so to provide vistas over the neighbouring farmland, while the fenceline keeps both people and animals separate and safe.

In other parks, e.g., Battle Hill and Belmont during lambing, people are restricted from specific areas so to protect livestock. Appropriate signage and explanations are used to inform the public about these temporary changes to access.

5.2 Pest plant and animal control

Pest plants and animals contribute greatly to the nation-wide decline in our indigenous biodiversity. Active management is required to control these pests.

Pest plants impact farming by creating health and safety issues and affecting grazing. For example, gorse in a paddock can interfere with sight lines and increase the fire risk. Pest plants also affect the productivity of the land by displacing pasture. Throughout this document, we use the terms pest plants and weeds interchangeably.

Some members of the community are concerned about our use of herbicides to manage pest plants. We have weighed up the risk pest plants pose to indigenous biodiversity and farm productivity against the risk of herbicides used in accordance with best practice rules and instructions. At this time, we continue to consider that herbicides are a critical tool in pest plant management.

As set out in the PNP, when determining what tool is best for pest plant and animal control programmes, we will consider the following factors:

- Vulnerability and ecological value of the indigenous biodiversity under threat
- Nature and level of the threat posed
- Size of the pest population
- Impact of any negative effects of the methods used
- What efficient and cost-effective techniques available.

This means the use of herbicides is always evaluated by way of a risk/benefit analysis, and are used carefully and in response to the threat posed by the pest plants. It may be in some areas that, over time, weeds are gradually overtaken by native plants, and that the speed of this may be acceptable. In other situations, the risk to public safety and assets means that more active intervention is needed.

Our pest plant and animal control is guided by Greater Wellington's 2002-2022 Regional Pest Management Strategy. This Strategy is created under the Biosecurity Act 1993 and focuses on preventing or reducing the negative effects of certain pests on the environment. Efficient and effective pest management protects and improves not only indigenous biodiversity, but also recreation, aesthetic values, and public health and safety.

Concern about herbicides and their environmental and public health effects have been factored into the Regional Pest Management Strategy. Herbicide use is also regulated through legislation such as the Health and Safety in Employment Act 1992. Greater Wellington follows all possible precautions to minimise or eliminate the risk to the public and to the environment.

[1] This review was undertaken in 2012 and considered options for managing the farmed areas of the park, recommended an approach and suggested how this could be implemented.

We use a combination of pest plant and pest animal control methods in the parks.

Pest plant control helps indigenous plants thrive by removing pest plants by spraying. Aerial spraying is used when the pest plant infestation makes it unrealistic to spot treat, and in difficult locations. It can be useful as a one-off "knock down" for large infestations. Localised regrowth can then be controlled by spot control and grazing

- Spray drift is a concern. It is illegal for spray to drift outside a designated operational area, and we do all we can to ensure this does not happen. We do this by using the most up-to-date technology, for example, the helicopters deliver large droplets of herbicide rather than a fine mist, ensuring the spray falls at a controlled rate and is less likely to be blown outside the spray zone. We also carefully plan our spraying programmes around weather conditions. If the weather conditions become unfavourable, the spraying stops
- Risk is inherent in chemical use. All of the herbicides and pesticides Greater Wellington uses are approved for use and strictly regulated by the Environmental Protection Authority. Greater Wellington adheres to all the rules and guidelines, including those in the proposed Natural Resource Plan (pNRP) and operative regional plans. These plans outline specific conditions that must be met before allowing the spraying activity. For example, the relevant pNRP rule requires that an appropriately qualified person undertake the spraying, a spray plan be developed, prominent signage be displayed and spray application records kept[2].

Blackberry is an invasive weed which threatens indigenous vegetation and reduces land available for stock grazing. It is controlled with herbicide spraying where necessary, followed by spot control and grazing.

- Note that at the time of writing this rule is operative. However, it may change, depending on the outcome of the pNRP hearings.

Pest animal control helps indigenous plants to regenerate, and protects indigenous animals. We employ humane practices such as bait stations, shooting and trapping to control pest animals.

5.3 Maintaining significant landscapes

Our parks contain landscapes of regional significance and a diversity of landscape types. They are visually very different from each other, ranging from the open, remote, windswept escarpment at Baring Head to the rolling sand and peat country at QEP. Greater Wellington works to protect landscapes that have been identified as important in District Plans and open space plans.

Within our parks, however, landscapes are in a state of change. Native vegetation restoration works are underway, with an active programme of weed control and new plantings of native species. Different areas are in different stages of

[2] pNRP rule 36: Agrichemicals

restoration or maintenance, and in some areas passive bush restoration (letting nature take its course) is occurring.

A park's visitors preferred landscape is not always consistent in terms of historical and natural values. Each park is celebrated for different elements, so what is celebrated in one may be debated in another. For instance, Battle Hill is one of the last remaining extensive pastoral properties in the area. Part of managing its landscape is therefore about preserving pasture, and the use of land established a century ago. This means preserving the farming activities and maintaining a range of stock animals for the public to view. By contrast, QEP's features such as wetlands, rolling sand dunes and watercourses are important. Maintaining and restoring these is the focus, with farmed areas being retired as restoration funds become available or new recreation activity uses occur.

The parks are in different states of land management, depending on associated developments, funding and the direction set out in management plans. Over the last five years, Greater Wellington has been implementing guidance from Sustainable Land Use Plans for Battle Hill, Belmont and QEP. These plans are based on the principle of managing land according to its capabilities and characteristics, and retiring land of higher environmental value such as wetlands, gullies and waterways.

On first glance, retiring land from farming is a simple concept. However, to avoid extensive weed infestations, a lot of planning and delivery work must occur once farming stops.

In saying this, considerable progress has occurred towards environmental restoration across the parks network. For the purposes of comparison, we have outlined three very different parks with different significant landscapes below. Each park's landscape requires a different set of activities and priorities in terms of protecting these landscape values, retiring land or restoration.

- **Baring Head** – this area is a significant landscape. The hills in this area contribute to the striking visual setting of the harbour. The pastures on the top of the escarpment reflect the history of farming in the area, but they also provide a visual contrast between the pale colour of the pastures and the texture of the hills behind. Baring Head is the meeting place of the land, sea and sky. In order to maintain this, as detailed in the East Harbour Resource Statement, keeping the pasture short and weed free is required. Sheep grazing on site assists in this process along with minimising the fire risk.

Sheep grazing helps maintain Baring Head's open and regionally significant landscape where visitors are free to roam and see lambs in spring.

- **QEP** – significant landscapes include:

- Dunes – the park contains an extensive and unmodified coastal dune system. Such systems are rare in the Wellington Region. Weed control is needed to maintain the rolling dunes, and keep them free from pest plants. Grazing is used to maintain the landscape in specific areas. Without this weed control, the land is quickly overcome with woody weeds like gorse and lupin, and loses both its visual significance and recreational uses.
- Wetlands and waterways – the park's wetlands and waterways are a high priority for stock exclusion and restoration. Fencing now means that stock are excluded from significant waterways. This is a key step in improving these landscapes. Sites around water (such as seepage wetlands) are being progressively retired and fenced, with a buffer to allow for riparian planting.

A large kowhaiwhai panel at Ramaroa visitor hub at QEP illustrates the different park activities. Other interpretation for visitors is planned to reveal interesting park stories and to identify seasonal changes and activities.

- A management challenge in QEP is that the land reverts quickly to woody weeds, not indigenous species, which then need to be cleared prior to planting for 'active' restoration native species plantings occur. Passive restoration at QEP is not viable, particularly as this would increase fire risk as flammable weed species e.g., gorse, would dominate the landscape for many years before native vegetation emerges through it. For this reason, changes from grazing to native vegetation need to be well planned and resourced. For more information about specific work happening in the park in this area see the QEP section (section 6.6).
- Farming is a historically significant feature of this park. Before Europeans arrived, early Māori settlers grew vegetable crops in this area. Subsequently farming was identified in the Queen Elizabeth Park Heritage Framework[3] as a key part of the park's human history, and an element to be recognised and celebrated.

- **Battle Hill** – this park contains a historically significant working farm. Park maintenance includes continued farming and grazing. This is a key attraction for the public. The park also has significant environmental features e.g., the Swampy Gully wetland. This and other indigenous areas are in different stages of restoration.

5.4 Soil erosion

About 40 percent of the Wellington Region is erosion-prone hill country. The region's steep terrain, our maritime climate and earthquakes all contribute to soil

[3] This report is intended to provide a holistic framework for development and management of the park in relation to heritage.

erosion. Some farming activities, particularly vegetation clearance, can accelerate soil erosion.

In farmed areas, soil erosion decreases the land's productivity and increases the amount of sediment entering waterways. Increased sediment reduces water quality and harms freshwater and terrestrial ecosystems.

Greater Wellington therefore works to decrease soil erosion in its parks.

At QEP the licensee has undertaken pasture improvement by planting 'tall fescue' (a grass). This crop is intended to retain the topsoil and organic matter as well as reduce weed plant numbers.

Plans to minimise soil erosion

The pNRP identifies soil erosion as an issue. What activities can occur on erosion prone land are listed in through this plan's objectives, policies, rules and other methods. The objectives outline what the pNRP is aiming to achieve and give direction and justification for the policies, rules and other methods. The pNRP's Objective 42 states the aim of having *"soils [which] are healthy and productive, and accelerated soil erosion is reduced"*. PNRP Rule 100 goes on to specify conditions that must be met in order to clear vegetation on erosion prone land.

There are a number of options to address soil erosion on farmland. Identifying erosion prone areas and excluding stock is generally the first step. After that, sites are often planted with either natives or exotic forest species. In some cases, exotic species such as poplar and willows are planted with grazing underneath. "Zero tillage" pasture improvement involves spraying older less palatable grasses so to make way for sowing more palatable and nutritious species. This method, which results in grass dying before the new seed germinates, has generated adverse comments from the community because its use of herbicides. However, this practice complies with all the rules in the pNRP and has a range of environmental benefits including retention of topsoil, less weed germination and maintaining organic matter, which preserve soil moisture.

The pNRP Method 12 also states we will work towards encouraging sustainable rural land management by *"providing research, advice and promoting good management practices"* to landowners.

As part of this method we focus on developing and assisting with the implementation of riparian planting, erosion and sediment control.

5.5 Effects from different types of farming and grazing

There are different types of farming activities occurring on the parks' farms, ranging from farming sheep, deer and cows, to horse grazing. Some of the parks farmers make hay and silage and grow specialist livestock feed crops. Greater Wellington has an expectation of the parks farmers to conduct their farming activities within industry established good management practices. These practices work as a guide to reduce the impact of the various farming activities on the environment and to avoid degrading the farms soil and water. We have shown the good management practices relevant to farming practices on our parks in table 2.

Table 2: Good management practices in the parks' farms

Topic	Good management practices	Regional Park activities
Farm Planning	Identify the farm resources and risk factors that may affect water quality. Identify and plan appropriate mitigations.	These are identified in the Sustainable Land Use Plans for QEP, Belmont and Battle Hill.
Soil	Use of minimum tillage cultivation methods to maintain soil structure.	This method is used at QEP and Battle Hill.
	Maintain ground cover to reduce erosion risk and nutrient leaching.	Rotational grazing is used at QEP, and depending on conditions, at Belmont and Battle Hill.
	Reduce sediment loss through soil erosion and stream bank erosion.	The Sustainable Land Use Plans describe what streams require fencing
	Manage grazing to minimise losses from critical source areas.	The Sustainable Land Use Plans need to be updated to identify critical source areas
Nutrients	Manage the amount and timing of fertiliser inputs to minimise risk of losses. Use nutrient budgeting to improve nutrient efficiency.	The farmers undertake: -Soil fertility test -Dry matter tests -Stream monitoring

While sheep and cattle attract the most public attention, it is worth considering all grazing when managing the effects on the soil, water bodies, water quality, wetlands, landscapes and park values.

The public do not often consider the effect of horse grazing on the land as an issue, due to their recreation role in the park. While horses provide this role, their impact on the soil, water quality and ecosystems, though compaction, pugging and the inputs of nutrients is a concern for Greater Wellington.

The pNRP addresses the effects of livestock in Objectives 44 and 45. These objectives focus on minimising adverse effects on soil and water from land use activities, and reducing negative effects of livestock access on surface water bodies.

Case study 1: Smarter farming with science and technology

Technology has a significant place in modern day farming

All grazing licence holders in our parks have other farms, so the park farms are a component of their overall business operation. Like other businesses, research and new technology are an important part of their business. Farmers in general are increasingly using technology to stay competitive and operate more efficiently and effectively. This is commonly known as "precision farming", and it uses technology such as GIS data, readings from flow meters and automatic, accurate farm data from sensors to determine what actions are needed to most efficiently maximise stock growth while minimising inputs.

An example is how farmers are using a combination of science and technology to reduce their inputs (e.g., fertiliser) by mapping and identifying differing areas of land fertility and where inputs can be applied to most effectively create greater yield from pasture growth.

This example describes how science and technology can be used to apply fertiliser efficiently and minimise undesirable impacts such as nutrient runoff. More efficient and effective operations are better for the land and for farmers. Fertilisers are an expensive component of farming (superphosphate costs approximately $100/ha) and the application requires significant resources through aerial or tractor application. Applying science and technology allows farmers to be more efficient in their overall operations and better protects the land from unwanted effects.

Farmers use soil tests to make decisions about applying fertiliser

On Battle Hill, Belmont and Queen Elizabeth Park, the farmers pay for soil fertility tests. These tests show what nutrients are needed for productive pasture growth and stock health. For example, soil tests at Battle Hill show a difference in soil nutrients on the hills and the flats. Subsequently the farmer applies different types and amounts of fertiliser to these areas.

The weather also influences what types and how much fertiliser is required. When forage crops are growing rapidly, fertiliser may be applied to maximise the metabolisable energy (the energy available in the crop that stock can digest) of dry matter (pasture with all the water removed from it). Conversely, when growing conditions are poor or rain is forecasted, fertiliser is unlikely to be applied.

The farmers work with their fertiliser companies to determine what types and quantities of fertiliser to use e.g., natural fertilisers such as lime make grass more palatable for stock. Between them, they divide the farm into zones. The nutrient budget for each zone is calculated using decision support tools such software packages (with algorithms) that enable farmers to improve nutrient use on farms, and deliver better environmental outcomes and better farm profitability.

According to the suppliers, 'through computer-controlled precision aerial application there is less waste, reduced environmental impact and optimised production'. This system works by ensuring the right amount of the right fertiliser is placed where it is needed. On "smart planes" automated doors are activated so they are closed over areas where aerial spreading would be wasteful or environmentally unacceptable.

The fertiliser is applied precisely

Once the farmers and their fertiliser company determine how much and what types of fertiliser to use in each zone, the fertiliser is applied by topdressing. The farmer supplies the pilot boundaries of ecologically sensitive areas such as wetlands. Using GPS, no fertiliser is applied to such areas. The topdressing pilot varies how much fertiliser is applied per block by pitch adjusting the hopper doors (the doors on the fertiliser storage compartment).

Future technology will make fertiliser application more efficient

Scientists and farmers are investigating ways of making fertiliser application even more cost effective and environmentally sensitive. They are developing a remote sensing system that will create a unique soil fertility map across the terrain. This system might conduct 10,000 soil tests/ha. The soil fertility map will link with computer-controlled hopper doors. The precise opening, pitching and closing of the doors will allow the application of the optimal amount of fertiliser to specific areas. The parks' farmers are excited about this technology, and other emerging opportunities such as the use of drones. This is because technology can help reduce the amount of inputs per product unit. Farming more efficiently also protects the land.

5.6 Protecting wetlands

In the Wellington region, only 2.3% of the original extent of wetlands remains and many of these remaining wetlands are degraded. Wetlands continue to be threatened by a number of factors including changes to water levels and flow, conversion to urban areas, and farming use and damage caused by livestock.

What is a wetland?

The RMA defines a wetland as areas that "*includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions*".

Plans to improve effect on wetlands

The current PNP's Policy 19 states Greater Wellington will "*maintain aquatic ecosystem values*", specifically by "protecting wetlands, and restoring damaged wetlands to a healthy state."

The pNRP's Objective 17 contains more detail on the protection of wetlands, stating that the "*natural character of the coastal marine area, rivers, lakes and their margins and natural wetlands is preserved and protected from inappropriate use and development*." This objective is given effect by policies, which state that wetlands will be managed to maintain their natural values and that the restoration of natural wetlands will be encouraged.

These policies are implemented by rules (e.g., wetlands general conditions (pg. 158) and rules 104-111), which apply across all land tenures, including parks. For example, the rules detail about how close livestock can be to wetlands and other water bodies and under what conditions, as well as what activities can and cannot occur in wetlands.

This QEP seepage wetland is ephemeral and often dries out in summer. It is one of several seasonally wet areas which will be assessed by Greater Wellington to determine how best to retire and restore in future, after the focus shifts from higher priority waterbodies which are identified as either category 1 or 2 in the proposed Natural Resources Plan.

Rule 97 also addresses access to wetlands. It states that with significant natural wetlands (category 1 surface waterbodies as defined in the pNRP[4]) livestock access is limited to sheep, so long as several specific standards are met. This condition will be valid from 31/07/2018 if the standards are met. Otherwise stock access to these wetlands is a discretionary activity.

Other rules specify what activities are allowed in wetlands. For example, working on structures, planting and pest control, general activities and restoration.

Method 20 of the pNRP states that we will work with mana whenua, landowners, territorial authorities and the community to "***promote the value of wetlands and advocate for their management, restoration and protection***". Greater Wellington wants this to be a focus in our parks, as well as helping landowners to restore wetlands on their property. Various wetland restoration projects are underway and vary from park to park. QEP wetland restoration projects include the Mackays Crossing, Marines and Northern wetlands. At Battle Hill wetland restoration has taken place in Swampy Gully. Further opportunities exist in Belmont and East Harbour Regional Parks.

5.7 Maintaining and improving water quality

Research shows that stock access to streams and water bodies is a major source of bankside erosion, loss of riparian plant cover, degradation of aquatic habitat and a direct source of faecal pathogens. With this in mind, Greater Wellington is working to minimise these negative effects.

Keeping stock out of water bodies improves water quality, enhances biodiversity, reduces the risk of stock loss and can contribute to better stock health. The new pNRP rules help to achieve these aims.

Protecting and improving the quality of our region's water bodies is very importance to us. It is addressed in detail with objectives, policies and specific rules through the pNRP.

Objective 23 states the "*quality of water in the region's rivers, lakes, natural wetlands, groundwater and the coastal marine area is maintained or improved*". There are further objectives around discharges and minimising runoff or leaching contaminants.

Rule 97 states that from 31 July 2018, other than sheep access to significant natural wetlands, there is absolutely no livestock access to Category 1 surface waterbodies. This means some form of fencing, stock exclusion, or stock removal from the area is needed to protect these areas.

As with wetlands, the rules around waterbodies and livestock apply here too. An example at QEP is where fencing keeps livestock out of all category 1 and 2 surface waterbodies and other permanent water bodies in the park.

Greater Wellington prepares individual property Farm Environment Plans for landowners across the whole region, which include management of Category 1 and 2 surface waterbodies. To date, park management has been guided by individual Sustainable Land Use Plans. Following the review of the PNP new Farm Environmental Plans will succeed the Sustainable Land Use Plans and become the

[4] Category one surface waterbodies are streams, rivers and wetlands that are significant for a range of values and may be home to vulnerable native plants and animals. Category two surface waterbodies are estuaries that are not listed as Category 1; rivers that have an active bed width of 1 metre or wider; drains greater than 1-metre wide; water races that are mapped within the lowland areas shown on Map 29 of the proposed Natural Resources Plan (lowland area of Ruamahanga Catchment); any river and stream not listed as a Category 1, but are important to trout spawning (identified in Schedule 1 (trout habitat)); and natural lakes.

"go to" guidance for managing farms on our regional parks. Farm Environmental Plans are focused on reducing the impacts of contaminants on waterways. Greater Wellington will therefore develop the Farm Environment Plans for the farms in the parks by firstly determining what contaminants are adversely affecting waterways. These plans will detail methods on reducing the particular contaminants.

5.8 A catchment wide approach: Whaitua Committees

Our region takes an integrated catchment management approach to managing our activities on land in order to look after our fresh and coastal water resources. This model emphasises local community values as a basis for decision-making. It includes the establishment of committees for the five catchment areas that Greater Wellington has named 'Whaitua'. Each Whaitua committee has a majority of members from the local community, along with regional and city/district councillors and mana whenua representatives. Currently there are two Whaitua processes underway: in the Ruamāhanga and in Te Awarua-o-Porirua whaitua.

The Whaitua committees are responsible for developing a Whaitua Implementation Programme, which will describe the ways in which the people in that catchment will need to manage activities that impact water so that we maintain and improve water quality. In particular, the Whaitua committees will identify objectives for water bodies and the amount of contaminants that may be released into water from activities on land (these are called 'limits'). This will involve limiting the amount of contaminants like sediment, nutrients and pathogens that reach water.

The recommendations in each Whaitua Implementation Programme will only affect landowners within that whaitua. The programme recommendations will influence the way parks are managed in the future. As the parks fall within (and sometimes across) different whaitua boundaries the management of individual parks will differ depending on the goals of each Whaitua Implementation Programme. Table 3 shows which park is within what Whaitua.

Table 3: What parks are within what Whaitua

Whaitua committee	Parks within Whaitua
Te Awarua-o-Porirua Whaitua – established December 2014	Battle Hill Belmont - western side
Wellington Harbour and Hutt Valley Whaitua – in process of establishment	Belmont - eastern side Kaitoke Pakuratahi East Harbour Wainuiomata Recreation Area
Kāpiti Coast Whaitua – to be established	QEP

An example of how a Whaitua Implementation Programme may influence parks management would be the identification of limits on sediment in Te Awarua-o-Porirua whaitua. In that catchment, reducing the sedimentation rate of in the harbour will be a key driver of the programme recommendations. A limit on sediment would influence the way Belmont and Battle Hill parks are managed. This future management should reduce the amount of sediment released from

activities and land uses in the parks, such as from runoff from grazing steep land, runoff from slips and landslides and stream bank erosion.

A Whaitua Implementation Programme may also make recommendations on specific management actions that should be undertaken in order to meet the Whaitua objectives. For example, a programme may recommend that farming practice in parks is reviewed, or that Farm Environmental Plans identify how the management of parks land will contribute to reducing sediment loads.

Some actions that are already being undertaken in parks will assist in meeting the goals of each Whaitua Implementation Programme and maintaining and improving water quality. For instance, work already underway to exclude stock from Category 1 and 2 surface waterbodies will contribute to reducing the amount of effluent reaching streams, reducing *E. coli* concentrations in water and therefore improving its recreational and cultural values.

5.9 Seasonal effects winter grazing

Farmers use winter grazing crops to maintain their stock's condition. A successful winter grazing crop will also minimise contaminant loss to the environment and protect valuable top soil.

These crops are useful as during wet winter conditions, soil can become more susceptible to compaction and pugging. Soil compaction and pugging can lead to an increase in weeds, water logging and greenhouse gas emission, increased surface runoff causing soil loss, an increase in sediment, nitrogen, phosphorus and bacteria to streams, and the degradation of soil structure.

5.10 Plans to minimise soil compaction

Agricultural Research has shown that current practices of cattle grazing on winter forage crops can make soil more compact, but that this can be lessened by using back-fencing (fencing to prevent stock from accessing previously grazed areas). In Greater Wellington's publication "Reducing the impacts of winter grazing on soil and water quality" it is recommended that all the region's farmers adopt the following techniques:

- Leaving gullies vegetated and fencing them off
- Cultivating with the contour of the land to minimise topsoil losses
- Strategic grazing and fencing riparian areas to improve water quality
- Grazing in less risky areas so that the time a grazed area adjoining a water way is left denuded is greatly reduced
- Back fencing where practical to help reduce soil damage and stirring up of soil.

Case study 2: Improving pastures for greater stock yield

The environment determines the types of pasture improvements required

'Pasture improvement' refers to the process of growing crops for stock feed. This activity only occurs where it is best suited to the land environment and the grazing operations. Currently pasture improvement activities occur at Battle Hill Farm Forest Park where the farmer grows rape (a brassica) and Italian ryegrass on flat areas, and at QEP where plantain (a broad-leaved herb), tall fescue (a grass) and clover are sown seasonally for stock feed. Sowing crops for stock increases the productivity of the areas farmed and reduces the areas required for stock grazing. Preparation for crop sowing is undertaken with care to minimise impacts on park land and waterways.

Pasture improvement increases stock yield

Pasture improvement increases the amount of metabolisable energy available for livestock. This means that stock put on weight faster, increasing the productivity per hectare. This decreases the amount of inputs such as water and nutrients needed, as well as decreasing the amount of discharges from stock and farming operations.

Pasture improvement also allows the farmer to maximise the use of different areas. This can result in smaller areas required for grazing. Less productive areas of park are generally excluded from grazing licence areas.

Above: 'Plantain' and clover crop at QEP. Different crops at different times of year means more changeable landscape views than the undeveloped pasture grasses of past grazing activities. Cropping with different types of stock feed crops that are suited to the soil types of the park, means that there is less need for the application of fertilisers to improve the metabolised energy of dry matter from the feed the stock graze on. Cropping can appear to be an 'intensification' of farming activity, but for the farmer and the land it is more about "sustainable farming" to mimimise additional inputs of expensive fertiliser, and to preserve the soil and its organic matter.

In the past, before Greater Wellington issued the current ten-year, longer-term grazing licences, there was little incentive for the previous farmers (who held only three-year licences) to invest in pasture improvement and the preparatory weed management work. Increasing licence terms has made it worthwhile for farmers to improve the pastures of selected areas of parks.

How crops are planted and managed

Existing vegetation in the area to be improved is sprayed with herbicides to kill weeds and other unwanted vegetation. The dead vegetation then forms a layer that protects the soil from drying out and aids seed germination. The farmer then 'directly drills' (seed is placed in the soil without any prior soil cultivation) the pasture crop seeds into the soil with machinery towed by tractor. This maintains the soil structure and unlike tilling (ploughing), does not disturb the soil. Reducing soil disturbance reduces the potential for sediment runoff into adjoining waterways.

Stock graze the crop once it is suitably mature. At QEP mobs of up to 300 lambs are rotated around the farm blocks (most are approximately 2ha) every 2-4 days. This allows the land and pasture to regrow, sustaining the grazing and returning a high yield.

Pasture improvement increases land productivity and resilience.

Farmers improve their pasture to make their farms more productive. Pasture improvement can also make grazed areas more resilient by:

- Establishing crops that are more tolerate than pasture grass to extreme weather events such as drought, and are less flammable
- Decreasing the use of fertiliser by increasing soil fertility. For example clover fixes nitrogen into the soil
- Breaking the perennial use of sprays to control weeds, as pasture crops can outcompete some weeds
- Breaking pest cycles e.g., clover root weevil, by replacing their host plant with a non-host plant. This can reduce the use of pesticides
- Reducing parasite abundance. At QEP lambs graze the pasture crops, followed by cattle. The cattle remove lamb parasites, the lambs' cattle parasites. Neither are susceptible to the others parasites. This increases stock health and reduces the need for drenching.

The appearance of pasture improvement in the landscape

Pasture improvement changes the look of the landscape. Improved areas are less diverse than unimproved areas and there may be more stock grazing the new pasture. While the farmer is establishing pasture crops, the area can also look bare or be a different colour to the previous pasture.

Sheep grazing a rape crop at Battle Hill, on the eastern side of the under-construction Transmission Gully motorway. Rape is a high yielding crop that can be grazed multiple times. It provides excellent summer-early winter feed.

The amount of rain has a significant effect on how the land looks. At QEP the very wet 2017 winter and spring meant that low lying areas of the park were inundated for a considerable period, killing much of the pasture crops. This, combined with the following very dry summer allowed the seed banks of weed species such as willow weed, dock and rushes to germinate and the weeds to outcompete the pasture crops. However, these landscape changes occur on farms, irrespective if the pasture has or hasn't been improved.

6. FARMING ACTIVITIES BY PARK

6.1 Battle Hill Farm Forest Park

6.1.1 Background and history

Battle Hill is situated on Paekākāriki Hill Road in the Horokiri Valley. It is the smallest of the regional parks, covering 500 hectares, and is crossed by several tributaries of the Horokiri Stream. The park is rich in Māori and European history. Its terrain encompasses rolling land on the valley floor with high steep hills on the east, extending to the Akatarawa Forest boundary. The eastern hills are covered in plantation forestry (managed by the timber company PF Olsen) with a small remnant of native lowland forest on the lower face. Sections of this land will be milled and replanted, while others will be milled and left to regrow as native bush.

As the park is one of the last remaining extensive pastoral properties in the area, significantly the remainder is mainly in pasture. This preserves a land use pattern established a century ago.

6.1.2 Park purpose

Greater Wellington purchased the property in 1987, as it seen was an opportunity to combine a working farm with a commercial forestry operation, and a wide range of recreational activities, for use by the Wellington public.

A broad philosophical objective was to foster the development of a sense of regional identity and understanding between Wellington's urban and rural communities.

This history distinguishes the park from our other parks as it was set aside for recreation, farming and forestry – our only 'farm forest park.'

6.1.3 Licencing for farming

There are two grazing licences in this park:

- 117ha licenced to Battle Hill Farms Ltd. This grazing licence covers flats and easy hill country. The grazing licence is a land management tool intended to maintain the traditional character of the farm. The licence places restrictions on stock levels, ensures the park's use for recreational purposes and enables public to view farming practices.
- The Wellington Riding for the disabled (WRDA) grazing licence. WRDA are based at the park and graze ten horses year-round. They have a ten-year grazing licence over three pieces of land (total area being 12ha) and 35 year lease of an area of Abbotts Field where they are constructing a covered riding arena. The covered riding arena will be available to other riding groups to hire when WRDA are not using it. WRDA is a not for profit organisation that provides opportunities for people with disabilities to enjoy the therapeutic benefits of horse riding.

Riding for Disabled has a 10-year grazing licence at Battle Hill. They are based at the park to provide therapeutic riding activities for children with disabilities.

Appendix 2 contains a map showing the land licenced for grazing at Battle Hill.

6.1.4 Education and interpretation activities

The farm enables the community to learn about farm activities. Each year hundreds of schoolchildren, community groups and corporate groups visit it and participate in its upkeep.

Over the last 20 years, Greater Wellington has refurbished and restored many of Battle Hill's farm buildings. Of particular note is the Abbott homestead, built in 1908, which is now the park administration centre.

The woolshed, built in 1920, was restored with a mezzanine floor. This building is known as the Ken Gray Education Centre.

Maintaining this working farm experience, providing education on sustainable farming and implementing a sustainable land management plan form a clear management focus for Battle Hill.

The viewing area above the Battle Hill woolshed is also be used as a classroom for visiting schools.

6.1.5 Sustainable land management

Greater Wellington park staff and farm licensee are working towards meeting the expectations set out in that plan, including those focused on stock exclusion and water quality.

Specific sustainable land management activities at the park include:

- Restrictions on stock units[5]. In order to maintain pasture quality the restrictions are 1,600 units in winter and 2,200 units in summer.
- Planting specimen trees in the park, including karaka, tōtara and lacebark.
- Stabilising land and reducing sediment loss by the annual planting of poplar and willow poles in erodible gullies.
- Restoring a wetland in Swampy Gully. This is the largest restoration project underway in the park. This project is ongoing, as it is planned to plant all of the gullies and upstream banks of the Swampy Gully stream over time.
- Other wetland areas have been enhanced with fencing and planting.
- Other plantings in the park include riparian plantings along Horokiri West Stream and a wetland area near Transmission Gully.
- A seep was fenced in 1999, in order to demonstrate how fencing off an area can improve nutrient breakdown.
- In the summer of 2017/2018 Greater Wellington installed three fish passage structures in an unnamed tributary of the Horokiri Stream. As well as providing fish passage, the visibility of these structures from tracks well used by the public will provide opportunities for Greater Wellington to demonstrate how fish passage can be developed

6.1.6 Public access

Battle Hill is almost fully accessible to the public. The exceptions are when farm operations require temporary closures, and the parks administration area around the homestead.

[5] One stock unit is a 55kg breeding ewe suckling one lamb. Other stock can be compared against this measure. For example a 350kg dairy cow equates to 6.10 stock units

As in other parks where there are breeding sheep and cattle, there are annual temporary closures from August to October of specific areas for lambing and calving. Main trails remain accessible during this time.

No dogs are permitted on Battle Hill Farm Forest Park.

6.1.7 Transmission Gully

The under-construction Transmission Gully motorway traverses the park. The motorway is flanked on one side by production forest and on the other by grazed farm park.

The major impact has been a loss of approximately 23ha of mainly flat land from the park, especially from the farming operation.

6.1.8 Opportunities

Farming is a core activity for Battle Hill and provides farming education opportunities through events, school activities, ranger led activities and informal interpretation. These activities will continue and likely become more significant in future. The Transmission Gully motorway may increase visitor numbers as people may become aware of the park.

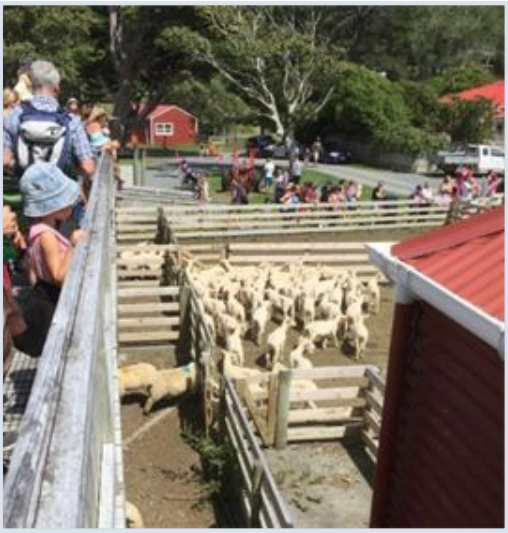
Case Study 3: Farming in the public spotlight at Battle Hill

Farming activities are part of the purpose for the park at Battle Hill. This means that the farm licence holder has a key role in public education about farming and enabling the public to see how a working farm operates.

The farmer, with the support of the park ranger makes this possible with easily viewable farm areas and operations. The large woolshed close to the park entrance has purpose-built viewing areas where visitors can see stock work taking place. The viewing areas are also wheelchair accessible. From the mezzanine floor above the shearing stalls and from the elevated walkway park visitors can see shearing, docking, dagging, drenching and other day to day work activities taking place. Lane fencing around the farm allows visitors to get close to stock while staying safe.

Visitors who may be camping, walking, horse riding or mountain biking can view most areas of the park as they recreate. Many are interested in finding out how the farm operates, and if the farmer is available, he is happy to stop for a chat. Wellington Riding for the Disabled group are now also based at the park and graze their horses in Spring Paddock. This adds another attraction to the farm.

Battle Hill is home for many regular large events including horse riding events, markets and the annual ‘Farm Day’ held during the January holiday period. Farm Day was held on Wellington Anniversary Weekend in 2017 and 2018. It is a big event where visitors can view farm animals, see stock work demonstrations such as sheep herding by farm dog, and have fun with activities such as gumboot throwing. Farm Day visitors have increased from about 1200 in 2017 to an estimated 3200 in 2018. All farm grazing licence holders come together to host Farm Day and demonstrate different aspects of farming. The cost of shearing the sheep for Farm Day in 2018 was greater than the price of wool the farmer received from selling it. Low wool prices are making this aspect of farming challenging for many farmers.



Farm Day in 2018 saw approximately 3500 people visiting Battle Hill and seeing a range of farming demonstration activities.

Farm Day activities in 2018 included an impressive display of farm dog sheep herding skills. Dogs are specially bred and trained for this activity.

Creating urban –rural connections

To accommodate the various events at Battle Hill such as equestrian shows, markets, and running or orienteering events, the farmer needs to regularly move stock from paddock to paddock. This can mean a lot more work for the farmer to ensure the events can take place safely for visitors and farm animals.

The benefits for the public are the opportunity to make connections from urban life to the rural community where food produce comes from. At places such as Battle Hill visitors can see how farmers work to manage land in a sustainable way. This is increasingly important with the general focus on improving water quality and maintaining high levels of stream health. At Battle Hill a water monitoring station is located downstream within the park and feeds important information to Greater Wellington scientists who can then provide feedback to the various licence holders at Battle Hill if any significant issues occur which may be related to their activities or weather events.

6.2 Belmont Regional Park

Belmont Regional Park is located in the hill country between Porirua, the Hutt Valley and Wellington city. It encompasses 3,500ha, with large sections of the park including ridge-tops visible from Hutt, Porirua and Wellington cities. It is characterised by steep hills and valleys, and contains the headwaters of several streams.

The majority of the park is pasture, though some of the steeper slopes and gullies are regenerating gorse and native bush, e.g., native vegetation dominates the Korokoro and Dry Creek valleys. There are also a number of lowland indigenous bush remnants, which are some of the few remaining in the southwest of the region.

The indigenous habitat of the park provides a “bird corridor” to Wellington city and beyond. The park has opportunities for walkers, cyclists and horse riders. Multisport events also take place in the park.The Stratton Street Woolshed classroom is a facility used for education, events and meetings.

6.2.1 Farming in the park

Currently about one third of Belmont is farmed. There are two main blocks, one east of Transmission Gully (1161ha) and one west of Transmission Gully, around 120ha. As a result of negotiations with the New Zealand Transport Agency about the Transmission Gully motorway, the main farm hub was moved to the top of Hill Road and a number of new facilities were constructed, including a new woolshed and covered yards.

Waitangirua Farm (in the block east of Transmission Gully) was originally owned by Lands and Survey, then by Landcorp before being purchased by Greater Wellington. It has a long history of farming. Parts of the residential area in eastern Porirua, such as Waitangirua, were farmed before residential development. Over recent years there have been several large catchment areas (all in the main Korokoro and Cannon's Creek catchment) retired from grazing as part of our land management practices. Approximately 50ha of the park was incorporated into the Transmission Gully project. However, 160ha was set aside for mitigation restoration activity as part of the Transmission Gully resource consent requirements.

Belmont Regional Park offers busy and open grassland landscapes for trail based recreation activities. Many of the gullies in the park have been retired from farming and are progressively being restored to native vegetation such as the headwaters of the Korokoro catchment (top). The views from the open grassy hill tops are panoramic.

6.2.2 Public access

Belmont provides full access for recreation, including all farmed areas, except for temporary closures for stock movements and farming operational activities. Additional lanes and fencing enables public access during lambing/calving.

The greatest restriction on access relates to the Transmission Gully designation. Any tracks that cross this designation are currently closed until 2020 or when the work is completed. Underpasses and bridges will see these reconnected at this project's completion. However, a large track network within Belmont that has no connection to the farming operation remains open year-round.

Dogs are prohibited from all farmed areas of the park, but the forested areas are open to dog walking.

6.2.3 Licences

There are several grazing licences in the park.

The western block is 116ha. This block is managed as a farm, by way of a licence to Notting Hill Farms. This is a five-year term licence and requires the farmers to use good farming practices including:

- Keeping stock numbers to an appropriate level

- Enabling the public to observe farming practices and animal husbandry
- Making the area available for recreational purposes and preserving the cultural, historical and conservation values of the land.

The licence also requires that the areas designated under the New Zealand Walkways Act 1990 and the eight areas (totalling 80ha) covenanted to the Minister of Conservation remain open to the public.

The 1,200ha eastern side, or Waitangirua Farm, is held by Toviewadream Farming Ltd. This licence runs for just under 10 years and has the same license requirements as the western block.

The smallest area, the Stratton Street grazing area of 16ha, is licenced to Chelsea Koelman on a five-year term. The licence is restricted to horses or sheep only and has strict limits on maximum stock units.

A block of 24ha located at Stratton Street is licenced to the Belmont Branch of the Hutt Valley Pony Club. The club has a three-year term for grazing, riding and training horses. This licence specifies that the club cannot prevent or restrict access to the public walkway within the land.

An 18ha area, located at Hill Road, is also licenced to Belmont Branch of the Hutt Valley Pony Club. This licence is also on a three-year term.

Appendix 2 contains a map showing the land licenced for grazing at Belmont.

Case study 4: Lamb chops- from Belmont paddock to your plate

A grazing licence holder runs their business as a “paddock to plate” farm operation. This means the lamb they sell online was born and raised in the park, the customers can get to know the farmer and as park visitors, can see how farm stock is managed in Belmont. This is different to other park grazing licences where stock are born and bred or fattened elsewhere on other farm properties. For customers who want to know about the origins and practices for the meat they eat; they can see the stock lifecycle in Belmont and know a lot about what they eat.

From the farmer’s perspective, this paddock to plate approach allows the farmer to sell a premium product. For this meat product, the farmer chooses only the best condition female lambs, so sometimes only 30 out of 100 lambs are processed. Other lambs not chosen for paddock to plate gourmet lamb dinners go to market via other meat product streams or remain on the park as breeding stock. These practices are designed to be “made to order”, so the lamb the Belmont farmer sells is butchered specifically for the customer. The paddock to plate meat stream with grazing on the park is largely transparent for the customer, with a focus on general best practice in all areas of the farming, from sustainable land management and fertiliser use to animal welfare.

In other parks there is a mixture of farm grazing purposes – breeding, fattening, lambing and calving of cows, sheep and other stock on rotation from other farms via park grazing licence areas.

Lambs are bred and raised in the scenic pastures of Belmont Regional Park

The best condition lambs are handpicked for processing to order

Premium cut 'Belmont lamb' is sold direct to customers and supermarkets direct from 'paddock to plate'

6.2.4 Opportunities

There are opportunities for better interpretation and promotion of farming as well as restoration of indigenous vegetation in the park. Farming is likely to continue as this is the most viable means of large-scale land management and management of the scenic landscapes of the open hill tops.

We will continue indigenous vegetation restoration, particularly as external funds become available, and progressively wider areas of native bush will replace currently farmed areas of marginal land, particularly in steeper terrain. Open grassy areas are attractive and a preferable landscape for some people. These areas will be maintained where they are identified as important by the community or through District Plans.

6.3 Baring Head, East Harbour Regional Park

East Harbour Regional Park is located on the eastern side of Wellington Harbour. The park covers just over 2,000ha and is made up of three separate blocks, the northern forest, the Parangarahu Lakes (the Lakes block) and Baring Head. The latter is the site of New Zealand's first lighthouse and is cherished for its significant and striking landscape.

In recent history, farming and grazing have only occurred in the Lakes Block and Baring Head, so this report will focus on these.

6.3.1 Significant landscape

The East Harbour hills are a significant landscape, because of their contribution to the harbour's setting. Grazing is utilised in 186ha of the Baring Head block to maintain

this significant landscape and keep the land clear so the impact of the landscape's character is sustained. Grazing also helps to mitigate the fire risk.

The long ridge immediately to the east of the harbour from Wainuiomata Hill to Pencarrow Head is the least modified skyline in the harbour's visual catchment. Its profile is unimpaired by structural developments, such as the telecommunications masts, transmission pylons or wind turbines.

The northern section of the Eastbourne Hills is largely forested. It has a natural character that harmonises with the forested hills of the Remutaka Range. On the southern section, from Camp Bay to Baring Head, the forest cover is largely absent, reflecting the history of farming in this area. It is thought that the ridgeline between Camp Bay and Baring Head and the hills fronting onto Fitzroy Bay were cleared at the time of European settlement in the 1840s.

The area's form and visual impact are enhanced by the visual character of the pasture which makes up the upper surfaces. The pale colour and smooth texture of these surfaces, when seen from a distance, contrast strongly with the colours and textures of the hills behind, giving the area considerable visual prominence when viewed from any distance.

Sheep grazing helps to maintain the grasslands of the park and open views. Stock are excluded from areas along the Wainuiomata River where native vegetation restoration activities are taking place.

6.3.2 Sustainable land management

At Baring Head currently grazing is the best management option to mitigate fire risk in areas of low ecological significance. Our general approach is to remove stock from ecologically sensitive areas, in particular the riparian areas adjoining the Wainuiomata River. While grazed areas tend to have lower pest animal numbers, grazing can also damage sensitive native plants and fauna habitats. Stock are also excluded from heritage assets such as WWII structures throughout the park and the lighthouse complex.

Some rehabilitation work has been completed at the Baring Head block. Fences are maintained to keep stock out, and some plantings of native species have occurred over the years.

Pest animal control work is ongoing.

6.3.3 Public access

There are no limits to public access. Dog walking is prohibited beyond the low level Pencarrow lighthouse to protect wildlife, and throughout all of Baring Head. During lambing season it is also prohibited on the Pencarrow Coast Road.

6.3.4 Licenses

A grazing licence is held for Baring Head. The licence covers 186ha and is for a five-year term. It allows sheep grazing and limited cattle grazing for specified areas.

The licence specifies strict limits to stock units and imposes conditions that must be met in order to minimise impacts on the land.

Appendix 2 contains a map showing the land licenced for grazing at Baring Head.

6.3.5 Opportunities

The grassy open western escarpment of Baring Head is identified as a significant landscape and will be maintained through grazing activities or grass slashing. Seepage wetlands will however be fenced from stock. Other areas of the park will be progressively restored to native bush with the assistance of the Friends of Baring Head and others stakeholders.

6.4 Kaitoke Regional Park

Kaitoke Regional Park lies in the foothills of the Tararua Ranges, approximately 10 kilometres north of Upper Hutt City. The park is about 2,860ha and entirely owned by Greater Wellington. The steep forested hill country of the Hutt Water Collection Area provides a backdrop to the park, while the park's river terraces and gentle hills provide opportunities for recreation.

6.4.1 Farming in the park

Several pastoral areas within the park are licenced for grazing purposes.

A 24.5ha block is leased for grazing at Te Marua. Two pastoral blocks with areas of 80.5ha and 4ha, located to the east of the Pakuratahi upper terraces and adjacent to Marchant road respectively, are presently leased for grazing. AgResearch leases a 2.4ha block of land above Kaitoke stream.[6]

6.4.2 Public access

There are no tracks to or through grazed areas, and the public are not encouraged to enter them.

6.4.3 Licences

- 4.5ha licenced on a five-year term with the Hutt Valley Pony Club. The licence specifies conditions including restrictions on stock units, and warnings around protecting the historic stonewalls in the land.
- 24ha is licenced for five years for grazing cattle, sheep and other domesticated livestock (Falloon licence). The licence contains a number of conditions, including prohibiting the overstocking of the land.
- 25ha is licenced on a five-year term (Westridge Farm licence). This licence has similar terms, and includes an expectation that the farmer and Greater Wellington will work together to restore fencing.
- 27ha adjoining the Twin Lakes is licenced on a three-year term with (Berkett licence). The licence is for grazing cattle, sheep and other

[6] GW, Kaitoke Resource Statement.

livestock, but specifies that grazing must avoid pugging to the ground. This licence is next to Macaskill Lakes, used by Wellington Water Limited for bulk water supply, and includes special conditions and restrictions including rules around weed control sprays and their use in proximity to the lakes, and the annual testing of the soil.

- 3.4ha is licenced on a five-year term (Burrell Partnership licence) and specifies a number of conditions and requirements including that the grazing will be conducted with good farming practices and that no trees will be removed or felled without permission.

Appendix 2 contains a map showing the land licenced for grazing at Kaitoke.

At Kaitoke many of the paddocks licenced for grazing contain areas of regenerating shrubland and forest. Hay is cut in some of the flat areas.

6.4.4 Opportunities

Because of the nearby seed source and potential for carbon credits (refer to section 7), some of these grazed areas may be revegetated in future through active or passive restoration activities.

Over time the licence at Te Marua Lakes has seen non-productive areas retired from grazing. Such retirements have enabled the linking of bush remnants.

6.5 Pakuratahi Forest

Pakuratahi lies on the western side of the Remutaka Ranges north of Upper Hutt and includes land in the Kaitoke basin and the Pakuratahi catchment area. At just over 8,000ha, this future water collection area forms a link with the Hutt and Wainuiomata catchments.

It contains both original and regenerating vegetation and has important environmental, cultural and heritage values, as well as providing recreation opportunities.

6.5.1 Farming in the park

This park has two small areas of farmland, amounting to less than 5ha. These are not significant for the purposes of this document.

The farmlands on the Pakuratahi upper terraces and adjacent to Marchant road were spilt into two separate licences using Farm Creek as a divider to minimise the impact on the waterway. This also enabled the waterway to be fully fenced from livestock. Public access to these blocks is limited, though the Second Lower Hutt Scout group access their hut via the grazed areas.

6.5.2 Opportunities

Grazed areas may be allowed to naturally revegetate in future, which could allow Greater Wellington to claim carbon credits.

Appendix 2 contains a map showing the land licenced for grazing at Pakuratahi.

6.6 Queen Elizabeth Park

Queen Elizabeth Park (QEP) is located on the Kāpiti Coast between Paekākāriki and Raumati, 40 kilometres north of Wellington. It sits on the seaward side of the Whareroa Farm (currently managed by the Department of Conservation). The park's 638ha is a mixture of farmland and dunes. This dune system is one of the Kāpiti Coast's last areas where the complete dune system, from beach to the inland dunes, is intact and undeveloped. The eastern length of the park is adjacent to State Highway 1.

QEP is a busy park with up to 450,000 people visiting annually. In the year post the construction of the Te Ara Whareroa trail in 2016, more than 100,000 people have walked or cycled along this shared trail. The trail now connects the communities of Paekākāriki and Raumati South with a safe, off road route. Since the trail's construction, some local businesses (e.g., cafes, pubs) have reported a 20 percent increase in turnover. QEP has become a trails destination for walking and cycling.

Approximately 60% of the park (380ha) is farmed or grazed, including areas licenced for horse grazing. Most of the park has been farmed since its inception in the 1950s. However, the park's location and aspect mean that the farming operation is subjected too much greater public scrutiny than any other farming operation in the regional parks network.

6.6.1 History

QEP is rich in history. Māori lived there for hundreds of years with major settlements at Wainui and Whareroa until the late 19th century. There were also several pas. The area contained significant wetlands and waterways that Māori canoed. Māori also cultivated food crops on areas now in the park.

European settlers began clearing the forests and draining the wetlands for farming in the mid-1850s. During World War 2 the park's sandy beach and rural surrounds were an ideal training ground for American troops preparing to fight in the Pacific.

6.6.2 Farming in the park

Today approximately 354ha of the park are grazed by beef cattle and sheep as part of a "finishing" operation. Younger animals are brought in from other farms where they have been bred and grown on for market.

Several areas of the farm are also used recreationally for equestrian and orienteering events.

The major reasons for farming areas of the park are:

- Land management – the 2012 QEP Farming Review found that there was strong stakeholder support for farming in the park as a means of managing open space values in an increasingly urban area
- Education – the farm provides the opportunity to educate people about modern farming methods and best practice land management

There are some areas of gorse in QEP but they are actively being removed. Here passive restoration, allowing native vegetation to grow through weeds, is not considered to be an acceptable practice because of the fire risk gorse and other weeds pose to neighbouring residential areas.

- Managing fire risk – the QEP Farming Review report identifies that farming manages the fire risk. The park is between two urban areas, so Greater Wellington has a responsibility to control highly flammable weeds, e.g., gorse
- Heritage value – farming has been outlined as one of five key heritage themes in the QEP Heritage Report 2012, which explains heritage themes as a way to understand and document the park's history
- Revenue – revenue gained from farming licences contributes to the maintenance, protection and enhancement of other areas of the park for both restoration and recreation.

6.6.3 Sustainable land management – current and future practices

Farming in QEP attracts concern from some community groups. There are, however, many sustainable land management projects underway, both within and outside of the farmed areas. Not all of this activity is visible to the public.

Some of these activities are currently underway, and others are proposed and recommended under the QEP Sustainable Land Use Plan. Some of the newer projects, such as the Maclean Trust restoration, are consistent with the Plan's recommendations. These projects demonstrate the progress Greater Wellington is making towards meeting the expectations set out in that plan.

Grazing management

The farm has good year-round pasture production, due to the soil moisture retention provided by the range in soil types. The farmer regularly moves livestock to avoid overusing specific paddocks and pastures. This rotational grazing can appear as an increase in activity, so is often inaccurately assumed to be "intensive farming". However, rotational grazing is a fundamental aspect of good pasture management, as it allows the pasture to refresh between grazing and helps retain quality soil.

The Plan was developed in 2012 and since then a new longer-term grazing licence has been granted. Some of the findings and recommendations of the Plan remain current and others are considered out of date. Greater Wellington may therefore develop a Farm Environment Plan, to replace the Sustainable Land Use Plans. The new licensee's practices which are consistent with the Plan include:

- Sheep and cattle stock being well matched to the land and soil types
- Improvements in soil fertility and maintenance of phosphate and potassium levels. These indicate good farm management practices
- Environmental performance indicators showing a low impact on the environment. Nitrogen leaching is estimate to be 7kg/ha/year, low compared to dairying which can exceed 40kg/ha/yr
- Drainage nitrate is estimated at 1mg/litre, well below the average for NZ farms. The risk of phosphate loss through run-off is low
- The current grazing lease sets maximum stock unit levels. These stock levels are appropriate but still require good pasture management.

Restoration planting

Many parts of the park are being restored, particularly riparian areas. Many other areas have been retired and are awaiting restoration.

Completed and in progress riparian restoration actions recommended in the Sustainable Land Use Plan

Achieved recommendations:

- No stock can access waterways. Fencing has excluded stock from drains within the network of main streams and drains
- Fencing has excluded stock from establishing riparian wetland vegetation
- The fenced riparian margins beside the streams are up to 10m wide, which allows room for recreational access, while providing stream shade. The popular Whareroa Stream track is a good example of this type of access through the farmed area. This style of riparian management creates more opportunities for public access in the farmed area, while maintaining the safety of both livestock and people.

In progress recommendations:

- Greater Wellington is improving weed control and establishing native riparian vegetation in areas where stock are excluded. This will provide a restored habitat link from the sea to Whareroa Farm and enhance freshwater habitat for native fish and habitat corridors for birds.

Some of these changes are not visible to the public as they are within farmland without access. Reasons why access is limited in specific areas is detailed in section 6.6.8.

Forest restoration

Current

- Greater Wellington and the community have restored the kahikatea forest remnant in the southwest of QEP and areas adjoining it.

At QEP the restoration area above creates a buffer between the kahikatea forest remnant and the pasture land. Over time kahikatea and other native species will regenerate through this vegetation to change the landscape appearance yet again.

Proposed

- From the 2017 agreement, the Maclean Trust restoration activities have commenced. A 25ha area, in the northeast corner of the park, will be cleared of weeds and replanted with native species including kānuka, mānuka and forest species. This site was recommended for restoration in the Sustainable Land Use Plan.
- Fencing and planting of small groves of native intermediate species, particularly kānuka, is proposed on steep dune faces throughout the stable inland dunes in the mid and north of the park. These are likely to be small areas of less than 1000m^2 and will be located in areas such as steeper paddock corners. Their establishment will assist soil protection and provide stock shade, shelter and biodiversity benefits. Remnant individual or clumps of kānuka may fenced into these groves.

Wetland restoration

Current

- A large wetland and pond at Mackays Crossing have been fenced off and restored
- Wet areas south of Mackay's Crossing have been retired, with weed control and planting over time. These include small areas between the "Eventing Paddock" and the large ephemeral dune swamp
- A large area of wetland in the southeast of QEP was retired and fenced in 2015. This area contains peaty soils and is dominated by rushes. There is little gorse in this area so restoration will be relatively straightforward.

Restored areas at QEP include wetlands with trails. This wetland is close to the Mackay's Crossing entrance.

Proposed

In the Sustainable Land Use Plan there are recommendations for the restoration of specific wetlands. These recommendations are detailed and commented on in table 4.

Table 4: The Sustainable Land Use Plan's recommendations for wetland restoration

Sustainable Land Use Plan recommendations	Comments
Northern wetlands – the wet peat basins in the north east of the park could be restored as wetlands and link to the main drain network. This would provide a sequence of restored habitat for aquatic and land based wild life. The immediate threat to these wetland areas is gorse. An intensive regime of gorse control would be required, followed by fencing to exclude stock	This area of peatlands and the adjoining area of duneland is identified for restoration using the Maclean Trust donation. Site-scale gorse control will commence in either January or autumn 2018, with the first stage of planting in winter 2018. A restoration plan is being developed to inundate as much of the peatlands as possible through dispersing water entering the park from the adjoining section of State Highway 1
Small dune wetlands in the northwest of the park are identified as being suitable for fencing and restoration. These are the old effluent ponds north of the dairy shed, and the small wetland south of the former dairy shed area	The old effluent ponds were significantly modified from their original stage and identified as safety risks to farm operations and park visitors. The former effluent material was excavated from the base of these ponds and they were filled and re-grassed. The area south of the new woolshed has been fenced in expectation of future retirement from stock.
Smaller wetland restoration areas are proposed in an area at the lower end of the main northern drain and around Waterfall Stream	Fencing and restoration activities will occur progressively to form an overall network of wetlands in the park

Other restoration opportunities identified in the Sustainable Land Use Plan

In the Plan other restoration opportunities are identified, that include:

- The creation of continuous corridors of habitat from the coast and dunes, across coastal wetlands and low altitude streams to the kohekohe forest in Whareroa Farm and north to the Mataihuka escarpment area. Behind these areas there is almost continuous linkage to Maugakotikutuku, Akatarawa and Tararua forests
- The formation of an almost continuous network of linked habitat through the flat eastern parts of the park. The proposed network of restoration, riparian and wetland restoration planting would create this network. The network would partially restore the original network of inland lakes and wetlands that provided food sources and transport links for Māori

There are a number of seasonal seepage wetlands such as this which will progressively be fenced to exclude stock when resources permit.

- The restoration of riparian and wetland networks along waterways and drains flowing into the Whareroa Stream. This would provide corridors from the coast to forest remnants on Matai huka, Whareroa Farm and beyond. The rich diversity of habitats across this park (e.g., coastal scrub, podocarp forest, wetlands and coastal forest) provides the potential for very high biodiversity values
- Patches on stable dunes within the farmed inland due areas will be restored to indigenous forest. These areas will provide shelter and shade for stock and recreational users, enhance the landscape values and be an important biodiversity stepping stone. This type of restoration has started on small blocks in the northern farmed area. These areas have been fenced off from livestock.

Greater Wellington generally agrees with these points. The priority to date has been the exclusion of stock from waterways and wetlands through fencing. Now that this priority has been largely achieved, the focus will shift to the large-scale revegetation needed to provide these corridors and linkages.

Streams such as this one in QEP have been fenced to exclude stock with sufficient width to allow for future trail development. Reducing weed infestations in waterways is required to improve the health of aquatic ecosystems and habitat for fish.

6.6.4 Pest management

The Sustainable Land Use Plan states that the dune ecosystems are very fragile. The dunes are also susceptible to invasion by pest plants and grazing by both stock and pest animals. Control of mammalian pests and pest plants has therefore been ongoing for many years.

Management of pest plants

- A pest plant survey of the park in 2001 identified 39 pest species and that their containment and removal was the priority. In the dunes, 19 species were highlighted for control while in the wetland, eight species were selected. The removal programme has been underway since 2002 and has been very successful in removing many weed species. Other species have also been successfully controlled and restoration planting has been undertaken to ensure regrowth of the pest plants is repressed.
- Anecdotal evidence suggests spot spraying of thistle and ragwort in the northern farm blocks has been effective. There is also a continual progression of pasture renewal. Weed control continues with mulching of gorse occurring on about once every three-to-four years. Fences are sprayed every year to keep them clear of weeds.
- A programme of large-scale aerial weed control is due for completion in 2018. Greater Wellington expects that regrowth will be manageable in future using both cattle grazing and ground-based application methods.

Pest animals

- Rabbits and hares favour pasture areas and can cause extensive damage to dune vegetation, which leads to erosion. These pest animals are controlled through regular culls
- Possum numbers are now at low levels in most areas because of trapping and baiting stations. No other animals are targeted.

6.6.5 Licences

QEP has a number of different licences on its land that involve grazing and farming.

- 25ha is licenced for five years to Kāpiti Stables, primarily for horse grazing and riding as part of the commercial horse trekking business. Included in the licence is the historic barn at Mackays Crossing. The licence also sets out restrictions and rules including stock limits of 30 horses and six cattle on the land.
- 21ha licenced to Kāpiti Pony Club for a term of five years. The licence is for horse grazing and activities associated with running a pony club.
- There is also a grazing licence with Beetham Pastural Limited of 354ha. This licence runs for five years from 2015 with a right of renewal for a further five. The defined 'end point' complies with section 74(4) of the RA. The licence also has conditions relating to protection of the natural environment including:
  - Clause 2.4 "*The Licensee will not do or permit to be done anything that will cause damage to or destruction of any natural, scenic, historic, cultural, archaeological, biological, geological or other scientific features, or indigenous flora and fauna in the Licensed Area*"
  - Other conditions of the licence ensure that good farm management practices are undertaken to protect the natural environment, including (but not limited to):
    - an obligation not to overstock the licenced area and to maintain soil fertility levels
    - minimise erosion
    - only plant grass, crops and other plants if these consistent with the guidelines established in the Sustainable Land Use Plan

  - prepare an Annual Farming Operation Plan
- The licence does not provide exclusive possession (as a lease would), but provides the licence holder with the right to enter upon and use the land
- Administering short term (up to 10 year) licences enables greater flexibility in response to broader community and environmental changes such as recreation activities and climate change effects
- Regular management plan updates ensure currency of management policies and actions in response to changing needs
- If Greater Wellington needs to take parts of the licenced area back for conservation or recreation reasons, the licence can be terminated with at least three months' notice. Any reduction in the licenced area would reduce the licence fees. We would not serve notice to the farmer without first undertaking a reasonable period of consultation with them.

Appendix 2 contains a map showing the land licenced for grazing at QEP.

6.6.6 Public access

Casual public access in QEP farmed areas is limited to the defined trails that run between fence lines beside individual paddocks e.g., the Yankee trail and the Whareroa Stream track. While there has been some adverse comment about restricted access to farmed areas, we have also observed that many people prefer a fence separating them and livestock.

Dog walking is an extremely popular activity at QEP. The current arrangement means that dogs can be walked beside farm paddocks e.g., on Te Ara o Whareroa, and on trails which are not used for livestock, such as the Whareroa Stream track.

Why is public access restricted?

Both the 2012 Farming Review and the Sustainable Land Use Plan contain recommendations to improve recreational access through the northern part of the park. This access is based around the waterway/wetland network, while limiting conflict with farming activities.

Apart from the Yankee trail and the Whareroa Stream track, there are no designated recreational tracks in the northern farmed area and other than on guided tours public access is not permitted, for the duration of the current farming licence. This is because the area has many small paddocks (~ 2ha), which allow frequent stock movements and resting of pasture. In spring and summer stock movements occur every two to three days with up to 300 lambs or calves moved at a time using farm access roads.

Most of the remainder of the park has full public access for visitors, except for grazed areas in the southern end of the park, where the Yankee trail is used by both the public and for stock access.

However, there are plans to increase public access in the northern farmed areas of QEP. Where public access is currently restricted, there are plans for additional public access through areas retired from farming and are being restored through the Maclean Trust restoration project. Walking, cycling and dog walking will also be permitted in these areas. Limited horse riding is already permitted along some trails.

As mentioned earlier the restriction of access to the public in any given park is neither permanent nor beyond the ten years of the licence term.

At present, park managers have had no significant indication of demand for recreation uses for all of QEP, with the majority of park visitors frequenting beach

and coastal areas. However, the primary purpose of QEP reservation under the Reserves Act is for recreation activities.

The community, through the PNP review consultation process, may identify appropriate recreation activities for currently farmed areas. If so these areas may be 'retired' from farming in future and converted to open space and recreation uses.

6.6.7 Opportunities

The stream retirement programme has included wide buffers that offer space to develop trails alongside water and through shaded areas. These trails would offer new loops and views to recreational users. Providing public access in this manner would help QEP develop as a destination for easy and safe walking and bike riding through farmland, past wetlands and along the coastal tracks.

We have very limited story-telling about farming activities and see new and existing trails as an opportunity to do more, to explain what is going on and why, especially how important freshwater values are being protected. Many habitat restoration activities are being undertaken in farmed areas, particularly fencing riparian strips, managing weed and replanting with native species. But while plants are small and slow growing this is not a particularly visible change.

We think improving access in the park and providing more interpretation opportunities is an important thing to do. But we would like to hear more from the general community about what the future activities in QEP should be, as well as what values are important to different people and why.

6.7 Other park agency farming and grazing activities

We have explored the grazing activities undertaken in Greater Wellington's regional parks and reserves in detail, but how do other park agencies manage large open space areas, and what can we learn from their management activities? Park managers shared their experiences and challenges at a Farming in Parks workshop at QEP in March 2018. A short summary follows. From our discussions, further investigation and feedback it is apparent that other agencies are facing similar issues and challenges in the management of large areas of open space, recreation and farming related activities.

Auckland Council

Grazing activities take place in 20 of the 23 regional parks in Auckland. The Regional Parks Management Plan (2010) identifies the context for farming and grazing: *The farmed areas are heritage landscapes in their own right, with the visual pattern of open and vegetated spaces reflecting the region's important farming heritage and the ongoing role of agriculture as a mainstay of our nation's economy. Farming operations are essential to the continued stewardship of the land and the maintenance of the rural character of the parks. Farming also provides a cost effective means of retaining these open space settings without compromising other park values.*

Farmed parks are managed to create a countryside landscape that provides settings for a range of recreation activities, and for heritage, conservation and education purposes. The farmed parks are also important in that they provide a rural experience for urban people, particularly children, with access to operational farms and opportunities for close encounters with farm animals. The focus of management is therefore on facilitating recreational access, safe use and enjoyment, and maintaining high visual standards, rather than operating on a purely commercial basis. www.aucklandcouncil.govt.nz

Ambury Park farm day, an event with up 40,000 visitors attending. Photo Auckland Council.

Some grazing licences are in place but much of the management of farming activities is undertaken by Auckland Council officers. In many parks rangers take an active role in day to day management of grazing activities and they are supported by a dedicated farm business manager. Farm animal viewing is promoted in all parks on the Auckland Council website, the advice for most parks with farming activities is 'In the springtime, lambs are a popular site attracting many visitors. You are free to wander through the paddocks containing animals but please follow any safety signs and respect restricted areas. Please leave gates as you find them'. Examples follow:

Ambury Regional Park near Auckland airport, also known as Ambury Farm, and has a focus on visitor engagement with farm animals and had 39-40,000 people attend the last farm day event. The farm has a variety of animals and visitors can undertake activities such as feeding lambs, getting up close with chickens, goats, cows, pigs, sheep and other animals.

Tawharanui is an open sanctuary with a working sheep and cattle farm. It is identified as being the first open sanctuary integrating conservation, recreation and farming, with 'pest free habitat providing a safe home to threatened native wildlife'. Volunteers contribute significantly to restoration activities here.

Highfield Garden Reserve near Warkworth more unusually has a herd of donkeys. The park has had donkeys since the 1960's and welcomes visitors 'bringing carrots and apples as treats' for them. The donkeys are a key attraction for this park, particularly when foals are born.

Highfield Garden Reserve donkeys. Photos: Donkeys Highfield Garden Reserve Facebook page

In the Farming in Parks workshop some of the key issues and opportunities for farming in Auckland parks were identified as:

- Managing public dog walking
- Protecting freshwater values
- Farm licence revenue contributing to more native vegetation restoration activities
- The importance of communication about farming activities and providing opportunities for learning and engagement in rural activities by urban area families and children who are becoming increasingly disconnected from the natural environment.
- Park rangers developing skills and knowledge in farm management to support their existing recreation and conservation work.

Cornwall Park, Auckland

The Cornwall Park Trust Board manages Cornwall Park which is a dedicated farm park of 172 hectares in urban Auckland with 600 sheep and 56 cows. The park sees 4 million visitors a year including between 500 and 600 dog walkers every day. They have a commercial approach to stock management and only encourage direct animal interactions during farm events. Park visitor engagement and heritage interpretation is a key focus. The park has an extensive network of trails, flower gardens, picnic facilities, heritage buildings, and a range of events including farm days and weekly activities such as outdoor games. They have a large number of schools visiting and do all farm work in public sight, including docking sheep tails. The park trails extend to adjoining One Tree Hill Domain owned by 13 different iwi and managed by Auckland Council. Significant management issues and opportunities include:

- Weed management (using sprays and manual removal)
- Managing commercial leases and interactions between farm operations and surrounding residential properties
- Maintaining only farm stock which are calm and do not pose a threat for park visitors
- Maintaining some separation between visitors and stock during breeding season to minimise calf and lamb losses.


Photos: Cornwall Park

Christchurch City Council

Over 2000 hectares of park are managed with grazing activities by Christchurch City Council across City Parks, the Port Hills and Banks Peninsula, as well as other areas held for future park development. Grazing activities are generally undertaken under lease or licence agreements and weed management activities are generally undertaken by the council – Rangers/Contractors/Volunteers.

Recreation access is permitted and encouraged in grazed areas of the Port Hills Reserve System. Seasonal closures for lambing occur only on three tracks on Banks Peninsula. City Parks with grazing have tracks fenced off from grazing. The most popular activities are walking, mountain biking, horse riding, para-gliding/hang gliding as well as orienteering and rogaining events. The

Port Hills Summit Road is a popular tourist attraction and a gondola passes through two reserves to the summit of Mt Cavendish Reserve, also popular with passive tourists.
The CCC regional parks are managed for a range of values, primarily for conservation, recreation, cultural and visual values. Erosion control and fire risk management are also important considerations.

Cattle have been phased off the Port Hills parks because of issues with trail damage, visitor safety, degradation of native/endemic flora and flora and sediment erosion but sheep grazing continues(but we do reserve the right to allow cattle grazing if its deemed appropriate for short periods). Over time grazed areas across the park network are being reduced with riparian zones and some rocky outcrops removed from grazing and protected with fencing. Observations from rangers have found that biodiversity values in ungrazed rank grass or extensively grazed areas are increasing with improved habitat for invertebrates and lizards, but this could be to the detriment of tussock regeneration and inter tussock flora.

Issues and opportunities in the management of the parks include:

- Vandalism such as track, fence and gate damage from four wheel drive visitors
- Sea level rise creating estuarine low lying areas which were previously grazed
- Tussock grassland landscapes are particularly enjoyed by visitors and maintaining and protecting them is valued
- Recreation activities including dog walking on-leash have a priority over grazing so lamb losses during lambing are higher than what would normally be expected – this has led to less revenue returns to the CCC than if it had no public access.
- The threat and effects of fire management are a significant issue for parks and in particular the Port Hills and regenerating areas where a lot of gorse and broom is present. Identifying defendable space around park boundaries is a priority.
- More monitoring of the effects of grazing/level of grazing is needed on short tussock land in regards to how it effects flora and fauna on the Port Hills/Banks Peninsula.
- Creating opportunities for the public to learn more about farming and reserve management – how to get involved, interpretation panels etc.

Port Hills parks, photos Christchurch City Council

Wellington City Council

Over 3500 hectares of land is managed with grazing in the outer green belt reserves which extend from beyond Johnsonville to the south coast and encompass the Makara Peak mountain bike park, Mount Kau Kau and the Skyline Walkway. Cattle and sheep grazing is used to maintain the open grassy ridgelines, hill tops and trails. The outer green belt also has areas of cemetery reserve. Some management agreements are in place for grazing and a new outer green belt management plan is being developed. Issues and opportunities include:

- Pugging of recreation trails in winter by cattle, equestrian clubs grazing horses in the park
- Some public feedback advocating for forest instead of open grassy hill tops with panoramic views

- Significant volunteer interest in participation in tree planting and pest animal trapping
- A very well informed community with a high level of interest in management
- Services running through the reserves such as power lines and maintenance of vegetation under them.

The Skyline Track in the Outer Green Belt Reserves Wellington. There are a mix of landscape types ranging from open grassy tops with panoramic views to dense bush in gullies and the lower slopes abutting residential areas.

7. IF NOT FARMING THEN WHAT?

This section explores a number of non-farming land management options and their estimated costs. We draw from the Queen Elizabeth Park Farming review (2012) and other sources. Overall we consider that for most parks there is no single or simple solution that doesn't require significant cost and/or time.

7.1 Summary of other land management options

Greater Wellington has a range of options for managing land in the parks and changing current land management practice. There may also be other options not explored here, so feedback is welcomed. Table 5 provides examples of alternative land management options. It excludes Battle Hill, as one of its primary purposes is farming activities, and Pakuratahi Forest as this park contains less than five hectares of licenced for grazing. The general comments apply to Kaitoke.

Table 5: Potential land management options

Land management options	**Baring Head, East Harbour**	**Belmont**	**QEP**
	Issues and opportunities in the parks		
Reserves Act classification	Mostly Scenic Reserve. The open grassy areas to be maintained for their scenic and landscape significance.	Mostly Recreation Reserve	Recreation Reserve
1. Recreation activities and general open space use	Current activities Take place in most areas of park and are trail and coastal based.	Current activities Trail based activities, some horse grazing,	Current activities Trail based activities, model aeroplane club, equestrian clubs, horse

Land management options	Baring Head, East Harbour	Belmont	QEP
	Issues and opportunities in the parks		
	Paragliding from cliff tops, rock climbing in the coastal area, river and coast fishing, heritage assets exploration (WW2 lookout, lighthouse complex). Visitors are free to roam across open grassy areas grazed by sheep. No dog walking.	and a camping area. Exploring heritage features such as dams and munitions stores. Dog walking in non-farmed areas only	trail riding concession, tramway and museum, surf lifesaving club, plant nursery, large picnic areas and bird viewing at wetlands. Dog walking on all trails except those in wetlands (to protect birds) and along the Yankee Trail.
	<u>Possible activities</u> Heritage trails, bird watching, public accommodation at the lighthouse complex, more trails and circuits	<u>Possible activities</u> Heritage trails, more trails and circuits.	<u>Possible activities</u> Tramway extension to create a circuit, further museum development. Trolley bus museum. More trails and circuits, access through all areas, mountain bike skills track, golf range, community gardens, restoration plantings, open space area slashing, tramway extension, café concession or hardstand area or food trucks, nature play spaces/ adventure trail. large scale adventure maze, labyrinth, other formed landscape features.

Land management options	Baring Head, East Harbour	Belmont	QEP
	Issues and opportunities in the parks		
2. Open grassland management by grass slashing, sale of hay/silage, ongoing weed management, 'green fire break' planting.	Opportunities for slashing are limited by terrain and the park's large area. Adjoining land to north is native bush and to the east the Wainuiomata river so 'green fire breaks' are not required here. Ongoing fire hazard reduction work.	Terrain limitations in many areas. Ongoing fire threat reduction work required for neighbouring residential areas.	Some terrain limitations and unsuitable areas e.g., wet areas with native sedges are unsuitable for slashing. Green and/or more regularly slashed firebreaks required near residential areas. A fire in the extensive peatlands burning below ground is difficult to extinguish and likely to be smoky. Ongoing fire threat reduction work required for neighbouring residential areas.
3. Passive native vegetation regeneration	**General issues and opportunities in these three parks**		
	• Passive native regeneration means letting weed species such as gorse act as nursery layer for indigenous species. These species grow through the nursery layer and eventually replace it. This method is unlikely to work at QEP, as the lack of native seed sources combined with light and warm conditions are ideal for gorse and lupin to dominate. Gorse and lupin however adversely affect the naturally low fertility sand and peat areas, as these species fixes extra nitrogen in the soil, thereby changing the area's ecology • Gorse represents a significant fire risk and so requires ongoing control in parks near urban areas • This method may require slashed fire breaks within the park and on its boundaries to reduce the spread of fire to neighbouring residential areas or to nearby significant assets, and asset fire threat reduction with 'green' (non-flammable species). Such breaks require ongoing maintenance • Seed dispersal from other native bushland by wind and birds is required. A sparse seed bank (seeds in the ground) and a lack of local seed sources will slow the pace of regeneration. • Passive native regeneration can be a slow process, as often it takes 50 years+ before native trees mature. There can be significant weed growth before native vegetation canopy dominates • Some active weed management is recommended e.g., noxious weed removal, waterway weed infestation removal to improve		

Land management options	Baring Head, East Harbour	Belmont	QEP
	Issues and opportunities in the parks		
	freshwater values etc • Emergent bushland may be dominated by non-local native species • Potential for carbon credits in some areas.		
4. Active native vegetation restoration – volunteers – Native plants planted – Weeds managed – Fire breaks maintained	• Friends of Baring Head are undertaking restoration activities in riparian and coastal areas, and in the recreation reserve at lighthouse • Native bush restoration of the Cook Strait escarpment is considered to be inappropriate	• Large land area and small friends groups	• Friends of QEP are undertaking restoration activities in riparian, wetland, forest and shrub land areas
	General issues and opportunities in these three parks		
	• Active weed management is required • Potential for carbon credits in some areas • Loss of revenue from grazing licences affects park management activities		
5. Active native bush active restoration – commercially, grant or community funded	• Appropriate in coastal and river areas, and seepage wetlands where stock are excluded • Friends of Baring Head are investigating restoration funding for Wainuiomata River margins[7] via crowd funding • Not appropriate in scenic reserves.	• Yet to be investigate	• The Friends of QEP have funding from DOC's Community Conservation Fund to undertake restoration
	• Cost of using commercial contractors to undertake restoration		

[7] https://millionmetres.org.nz/

Land management options	Baring Head, East Harbour	Belmont	QEP
	Issues and opportunities in the parks		
	planting and maintenance • The need for ongoing weed management and replacement plantings where original planting not successful • Pest management of browsing species and/or fencing to exclude stock • Riparian margin fencing maybe required • There is a cost for Greater Wellington officer support for implementation and monitoring • Can include support and assistance from park partners and volunteers		
6. Commercial planting e.g., mānuka, short lived crops	• Not appropriate in scenic reserves	• Yet to be investigated	• Likely that mānuka would remain the dominant canopy species and not act as a nursey layer • Unlikely there is sufficient area to make planting of mānuka for honey commercially viable
	General issues and opportunities in these three parks		
	• May be appropriate for some areas of these parks • Could investigate on a trial basis • Mānuka plantings are highly flammable and likely to increase fire threat and risk for neighbouring residential areas • Landscape appearance will change as crops grow and are harvested		

We have explored these options in section 7.3-7.6 and have made a number of assumptions relating to long term goals for land management. These assumptions are based on the 'guiding principles for management' identified in the Parks Network Plan (section 3.3). These guiding principles for native habitat restoration are:

- "*Restore significant, degraded ecosystems to a healthy functioning state and increase indigenous biodiversity*. Some of these ecosystems require restorative actions to increase the range of biodiversity features and species" (section 3.3(2))
- *Sustainably manage modified ecosystems, such as those on farms and forests.* Farming and forestry will be undertaken where they contribute to integrated catchment management, maintain landscape settings, provide access for recreational activities and follow best practice principles" (*section 3.3(3)*)
- *"Enhance ecological connections between natural areas and within catchments*. The protection and enhancement of ecological corridors between natural areas

will be undertaken to enhance the biodiversity of the parks network, adjoining land and the region" (*section 3.3(5)*).

Significant natural landscapes will be maintained and the park network will offer a range of settings and:

- *"Protect the visual quality of significant landscapes from inappropriate development and use.* Significant geological features and regionally significant landscapes that have high cultural or historic values will be protected and managed with minimal built development" (section 3.3(4))
- *"Provide for a range of settings and facilities for people to enjoy time out, explore nature and learn in a safe environment.* Each park contains different attractions, which are made available through services, trails and facilities that are appropriate to an individual park or part of the park. Risk from natural hazards to people and assets is minimised" (section 3.3(8))
- Promote in conjunction with other organisations and landholders, a variety of open space settings that meets the needs of the community for current and future generations. The lands owned or managed by Greater Wellington will contribute to and enhance the open spaces provided in the Wellington region" (section 3.3(18)).

Appropriate recreation activities will be supported and facilities will:

- *"Provide for a range of recreation opportunities within the network that cater for varying age, ability and experience.* Greater Wellington will provide for a range of outdoor recreational activities and attractions across the network that are appropriate to the park setting and reflect the needs and values of the region's diverse communities, and the environmental values of each particular park. These activities and attractions may be undertaken in partnership with clubs, events or licensees to meet community's needs" (section 3.3(7)).

We will work with partners, stakeholder and others in the community to achieve share goals in park management to:

- *"Promote community participation and sense of ownership.* Greater Wellington will encourage and engage in partnerships with different interest groups and organisations, to accomplish mutual goals for the benefit of the parks and ecosystems of the region. Greater Wellington will support volunteers and community groups and work co-operatively with leaseholders to enhance park visitor experiences" (section 3.3(14))
- *"Encourage stewardship of the resources found within the* Greater Wellington *parks network.* Greater Wellington will promote the parks as places for the community to participate in a range of conservation projects and will support groups and events that offer participants outdoor experiences and skills enrichment in activities such as camping, mountain biking, tramping and hunting".

7.2 Recreation activities and general open space use

In recreation reserves managed under the Reserves Act, areas not required for recreation purposes may be farmed. If demand for recreation activities changes the farmed areas of a park may be reduced, or the use of this management method may cease. For example, in Whitireia Park, open space areas are now maintained by annual slashing.

What new or additional recreation activities could take place in parks instead of farming?

The trail-based recreation activities of walking, cycling, running, dog walking and exploring are the most popular activities in parks. As population and demand for trails and access increases we may develop new trails in parks. This development can occur within farmed areas with stock free to range over trails or with lane fencing of tracks to exclude stock.

Other uses may be recreation clubs related such as model aeroplanes, gliding, mountain bike skills tracks, equestrian uses (including grazing), sports uses such as golf and croquet, restoration activities (as recreation), bird viewing, heritage asset restoration or reinstatement, museum and other club activities. Greater Wellington provides camping areas in some parks, while such areas adjoin QEP. We could consider the expansion of park-based camping areas if demand is apparent. Other possible future activities or enhancements to existing activities could be art and sculpture trails, which are likely to use existing trail networks.

Belmont and QEP are vast parks, which offer many different recreation activities. Even if existing uses are extended, it is still likely that not all areas can be specifically used for directly recreation related activities.

7.3 Open grassland management by grass slashing

In parks with farming activities and wide-open spaces, visitors are generally free to roam across the landscape. Longer distance walks in wide-open spaces are generally only available to people with personal access to privately owned farmland, or in Wellington at locations such as the Western Skyline track (which Wellington City Council maintains with stock grazing licences). PNP principles identify the importance for parks in maintaining a range of landscape experiences, while noting that general community values about different types of landscapes can change over time.

Our visitor-monitoring programme and management plan reviews can capture changing attitudes towards the experience preferences of park visitors. To date open grassy vistas have been identified as important in a number of places such as the hilltops of Belmont and the escarpment of Baring Head. Maintaining these areas requires active management, often with stock grazing and / or hay cutting.

The sale of hay which has been baled and cut, can generally offset the cost of cutting it so it becomes a cost neutral exercise. Some pasture management or enhancement (such as weed management and fertilizer) may be required to achieve the desired grass quality. Hay cutting and baling, which generally occurs in early summer, is also an effective means of reducing the risk of grass fire by significantly reducing the volume of fuel for fire.

7.4 Passive native bush regeneration

This means allowing nature to take its course on land no longer farmed. Short, medium and long-term habitat restoration results will vary across locations according to elements such as:

- The native and pest plant seed bed
- Soil types
- Proximity to other native bush and birds and their condition
- The climate
- Pest plants and pest animals, which can slow or prevent regeneration.

Passive restoration also takes time. A big issue for park managers is that in the early years of passive restoration, the land can look neglected and weed-infested. Often this look is not socially acceptable. We receive negative feedback about the overgrowth of weeds, and park neighbours can be concerned about the spread of weeds to their properties. Partners and stakeholders, such as friends groups, can have a significant role in educating the broader community about what is occurring and which weeds act as nursery species (e.g., gorse and tree lucerne).

Weeds such as gorse and broom currently dominate this north eastern area of Belmont where grazing activities no longer take place. However nearby in a 30 year-old bush regeneration site weeds are largely absent. Wilding pine maintenance is however required and undertaken as resources permit.

The QEP Farming Review considered options for land management other than the current farming model. This review looked specifically at QEP but also considered regional parks generally. The Farming Review provides good information on the potential costs associated with alternative methods of management, and looks into what restoration might look like on a larger scale.

Outside of QEP, passive regeneration would likely result in weeds dominating for 10 to 15 years, after which time native species may emerge above the weed canopy.

The Review found that support for the **return of the whole of QEP to its natural, unfarmed state, which would take 50-100 years to achieve**. However, it also found that simply removing faming activities and allowing the land to passively restore to native vegetation, with resultant weed growth in the short term, was not a suitable option for Greater Wellington or the park's stakeholders and community at the time.

The Review did however identify some benefits associated with ceasing farming. Greater Wellington would not need to maintain the extensive and expensive suite of farm related assets such as fences, sheds, stock water ponds, shearing shed, farm managers' residence and other infrastructure. Some assets would still be required for horse grazing, and water assets for fire suppression, but the park appearance could change to be more open 'park' like and less 'farm' like. The addition of agrichemicals for pasture improvement would no longer be required.

In QEP blackberry is a problem. Previously large areas of previously grazed back dunes containing a lot of blackberry were retired. After 20 years of passive management there is little regeneration occurring. Other areas were rotary

slashed and stock reintroduced until restoration planting occurred. Blackberry then needed active controlling by spraying and/or grubbing.

If this option is utilised in areas without blackberry, we would still have to manage an intensive fire threat in areas near residential property or significant park assets.

If weed infestations are not an acceptable outcome for previously farmed land then significantly more weed maintenance will be required when farming activities cease. The Farming Review identified that this could be a mix of intensive native planting and/or weed control.

7.5 Active native bush restoration

The QEP Farming Review identifies that restoration is preferable and achievable in the long term. Restoration is however expensive and time consuming.

At QEP intensive native vegetation planting is estimated to cost between $3,500 (using solely mānuka) and $91,000 (high-density wetland planting) per ha. **At the lower price of $3,500/ha the total capital cost of restoration for 380ha of farmed area at QEP would cost approximately $1.3 million.**

For active restoration to have more chances of success at QEP, firstly the weeds need to be removed manually or killed with herbicide. In many parts of the park the light sandy soils make weed removal and restoration planting work easier.

At Kaitoke, planting mānuka would cost about $4,100/ha, while planting a mix of forest species would cost about $42,500/ha. **The total capital cost of planting the 74ha grazed at this park in mānuka would therefore be approximately $320,000, planting a mix of forest species approximately $3.1 million.** For new plantings to survive, a maintenance cost of about $1750/ha per year for weed management for five years would also be required. Land waiting to be planted and not farmed would need to be maintained in a reasonably weed-free state and with vegetation reduced to minimise fire risk. This could be done via mowing and is estimated at costing $250/ha, assuming some income from silage or hay.

Greater Wellington Parks, Biodiversity and Biosecurity staff time is also required for any active restoration work. Costs however may be reduced if park partners and volunteer groups contributed time or funds to support commercially funded restoration efforts.

In 2017 the Maclean Trust very generously donated $300,000 to restore 25ha in the north east corner of QEP to native vegetation. This activity will take place over six years and will include weed maintenance and replacement of plants that do not survive.

To implement this project we will use lower cost restoration techniques, similar to forestry grade planting). This will speed up restoration efforts and differ from the traditional plant-in-bag approach.

At Baring Head, the Friends group are investigating options for crowd funding to source funds for further restoration plantings along the riparian margins of the Wainuiomata River.

Many corporate groups already participate in restoration planting activities throughout the park network. Seeking further corporate sponsorship for restoration planting work is also an option for park friends groups, partners and Greater Wellington.

The QEP native plant nursery is run by volunteers who grow plants from local seed for restoration plantings in the park. They grow between 12,000-13,000 native plants which are also planted by volunteers. Subsequently approximately 2ha of QEP are restored to native vegetation each year.

Another possible option is securing funding through contestable grant funds from agencies such the Ministry for Primary Industries, Ministry for the Environment or the Department of Conservation.

We could also permit external parties to plant areas of park that are currently farmed for the purposes of offsetting carbon dioxide (CO_2). These planted areas could gain credits gained through the Permanent Forestry Sink Initiative/Emissions Trading Scheme. These are government administered schemes that allow owners of forest to claim credits for the sequestrated CO_2, then sell these credits to emitters of CO_2 who wish to offset their carbon footprint. This concept, commonly termed carbon farming, is further detailed in section 7.6.1.

7.6 Other commercial uses

Other uses compatible with the classification of a reserve under the Reserves Act may also be considered. These could include licencing areas to beekeepers for foraging on mānuka or other flowering vegetation. Some bee keeping licences are already in place in QEP and Belmont, with bees foraging on existing vegetation.

7.6.1 Carbon farming

Carbon farming involves growing vegetation, quantifying the carbon dioxide sequestered during the vegetation's growth into tonnes of CO_2 per hectare, then selling the rights to each tonne of sequestered carbon. One tonne of sequestered CO_2 is termed a New Zealand Unit. The Ministry for Primary Industries administered Emissions Trading Scheme and Permanent Forestry Sink Initiative are programmes that enables private landowners to receive New Zealand Unit's through the creation of eligible forests. The Ministry for Primary Industries' definition of eligible land is that "*the land must be Kyoto-compliant land. That is, the land must not have been in forest at 31 December 1989, and there must have been a change of land use from non-forest to eligible forest since 31 December 1989. Active steps such as planting, seeding or facilitating natural regeneration must have been taken to create the eligible forest*".

Currently only land that meets the following specifications can be entered into the Emissions Trading Scheme or the Permanent Forestry Sink Initiative:

- Contains tree species capable of reaching five metres in the place they are growing, excluding species grown primarily for fruit or nuts
- Be at least 1ha in area
- The tree crown cover is greater than 30 percent in each hectare
- The average width of the tree cover must be at least 30 metres wide unless it is contiguous with an eligible forest.

Potentially Greater Wellington could work with external partners to establish carbon forests in the parks network.

Bees hive licences have been granted for many parks and the activity is typically "wintering" hives before they are moved to mānuka dominant sites for the 3-month summer (flowering) season. Here at Belmont bees are foraging in an area retired from farming which is passively restoring to indigenous vegetation which eventually grows through weeds.

7.6.2 Mānuka farming

If mānuka plantings were to occur to support broader scale bee keeping, the commercial party would likely pay for the planting and weed maintenance work and then receive the benefit of income from the mānuka honey. Establishment planting costs may be high but the return on investment would likely be relatively short term (three to five years and increasing as the trees mature). Agreements could reduce licence fees in return for parallel plantings of other native vegetation, which could also be used for carbon farming. In this scenario, restoration and maintenance is undertaken largely by others for longer-term habitat benefit.

Large plantings of mānuka could however result in a significant increased fire risk for parks and neighbouring residential areas. The location of areas for mānuka planting would need carefully consideration, particularly in the context of climate change. If mānuka was planted in the parks network, it would be grown from eco-sourced seed (seed gathered from locally occurring mānuka).

7.6.3 Other tree crops/ non-native plants

Subject to the reserve type, areas of park could be planted with introduced species for short term commercial tree crops (e.g., paulownia, a light weight timber used for surf board making). Pockets of different introduced species could be planted for recreation value e.g., Californian Redwood or for winter food for birds e.g., winter flowering non-invasive species.

Reviewing the Parks Network plan provides the opportunity to make changes to land use and activities taking place in parks if required. Many parks are managed under the Reserves Act, so uses and activities must be consistent with the purpose of a particular reserve.

7.7 Informing the PNP review

Restoration occurs all the time in parks, but it's not always visible to the public or initially effective as sometimes the plants die and new plantings are required. Regular weed maintenance also takes place.

Open areas of the parks will continue to be managed using a

range of management options from progressive restoration to grass mowing and stock grazing. In parks such as Battle Hill, farming is a core part of its purpose and the opportunity for visitors to see farm animals is a reason for many park visits. Farming at Battle Hill will continue.

In other parks, gradual native revegetation, as well as deliberate maintenance of some grassy open areas is the preferred long-term option with as much external funding and support from community partners and volunteers as possible. A collaborative approach, pooling resources and working with partners and stakeholders is preferred. In the meantime, farming activities are undertaken as a cost-effective land management option, supported in law by the Reserves Act.

The opportunity exists for Greater Wellington, partners and supporting stakeholder such as friends groups to continually improve the way park land is managed. This includes trialling different restoration methods, progressively eradicating weeds, protecting wetlands and streams areas from grazed horse and stock, and working in a collaborative manner to achieve shared goals.

The climate is changing and community values and viewpoints change over time. We are interested in your feedback about how Greater Wellington and farm licence holders are managing the land and providing for public access and enjoyment.

Feedback is important to inform the planning process for the Parks Network Plan review.

If you are interested in providing feedback, please email parksplanning@gw.govt.nz or use the general feedback form on the website for the Parks Network Plan review consultation.

8. FAQ FOR FARMING

Why does Greater Wellington use aerial spraying for controlling pest plants?
We use herbicides to help our native and threatened species to thrive, to protect our assets such as fences and to make pasture available for grazing. Aerial spraying is used when the scale of the problem is too big for spot treatment, or when the area is hard to reach. We utilise up-to-date technology and Environmental Protection Authority guidelines to ensure we minimise or eradicate the risks to people and animals

Why is farming part of our parks?
Farming has a number of purposes in our parks. It is a cost-effective form of land management and is also used to maintain significant landscapes. Farming is also often part of a park's cultural heritage values. Importantly, farming and grazing is also used to reduce fire the threat of fire. Farming on parks represents opportunities for educating our urbanised society about farming practises and for demonstrating modern farming practises. In some cases our parks are venues for educating young farmers about farming and for them to get practical work experience.

If a park has a farm, can that be changed?
Yes. Each farm is controlled by a licence. The licences are of varying lengths, but are all relatively short term. For example, the QEP farmer has a licence for terms of 10 years. If public demand was there for more access to the land in this park (as a recreation reserve), parts of the farmland could be retired and restored. It is our job to monitor the publics' demands and needs of the parks and consult with the community, as we are doing with the PNP review.

Is farming a new thing in parks?
No, farming has existed in many of our parks for many years. For a number of the parks it is part of the historical value of the park itself. There has been farming at QEP since the 1850s and in Battle Hill, the original 1920 buildings, including the woolshed, have been restored.

In recent times however, farmers themselves have become more educated and they are using recent new knowledge and technology to increase farm productivity while looking after the environment. For example, they are planting grass, clover and herbage types that been bred for specific soil and weather conditions rather than taking a "one size fits all" approach. This means that there is more change evident in farm management nowadays.

Where does the money earned from farming go?
Any revenue gained from farming goes back into our park's budgets. Depending on the park manager's and councillor agreement, this might mean that we can invest more in recreation infrastructure or restoration projects around the park. The restoration projects planned for many of our parks are expensive and so they are spaced out over years to fit into annual budgets and funding rounds. Income from farming and grazing helps to make these projects happen more quickly.

What is the PNP review process?
The Parks Network Plan (PNP) is Greater Wellington's management document for eight of our regional parks. It provides the overall vision, as well as specific policies and rules for how we use and protect our parks. Since the PNP was approved by Council in 2011 it has had three amendments, and now we are reviewing it so we can ensure it reflects both our own policy directions and what the community wants and needs from our parks. The PNP review is a chance for you to have your say on the future management of our parks.

How can I have my say on the PNP review?

We have a number of opportunities for you to give feedback. Here's the timeline of the review, keep an eye on our website for more updates and information.

- 2018 Autumn: Have your say' community consultation and discussion
- 2018 Winter: we will prepare a new draft PNP considering feedback received
- 2018 Spring: Have your say community consultation Draft PNP
- 2018/2019 Summer: Preparation of final PNP for Council approval and implementation

Farm day at Battle Hill where over 5000 visitors come to the park to learn about farming and see farming demonstrations such as shearing, farm dog work and play games such as gumboot throwing.

Appendix 1 – Key Native Ecosystem information for the parks

Battle Hill Farm Forest Park Key Native Ecosystem

The Battle Hill Bush Key Native Ecosystem (KNE) site covers an area of approximately 40 ha and comprises remnants of semi-coastal forest and a section of a tributary of Horokiri Stream. Most of the KNE site (26.5 ha) lies within the western margins of Battle Hill Farm Forest Park and is categorised as Scenic Reserve. Also included in the KNE site is 13.5 ha of private land of which 8.5 ha is legally protected by an open space covenant issued by the Queen Elizabeth II National Trust. The KNE site is bisected by Paekākāriki Hill Road approximately 5km north of Pāuatahanui and 13km south of Paekākāriki). Habitats surrounding the KNE site comprise indigenous and plantation forest, and farmland.

Battle Hill has a number of threatened plant species including the only self-sustaining population of taurepo (*Rhabdothamnus solandri*) in the Wellington region. The KNE site provides habitat for one nationally threatened and one at risk bird species as well as five at risk fish species.

Battle Hill has a number of key land features including ecological links between Pauatahanui and the Hutt Valley through Puketiro Forest and Akatarawa forest.

We source plants from the Tararua and the Sounds-Wellington ecological districts when planting the Battle Hill native bush remnant.

Belmont Regional Park KNE

The Belmont-Korokoro KNE site (1,039ha) is located in the southern end of the western Hutt hills between the suburbs of Horokiwi to the west and Korokoro and Maungaraki to the east.

Belmont-Dry Creek KNE site (615ha) is located in rolling and steep hill country on the western slopes of the Hutt Valley.

Belmont-Speedy's KNE site (158ha) contains remnant and regenerating lowland forest dominated by pukatea, tawa and rewarewa. It is situated on the western hills of the Hutt Valley between the suburbs of Belmont to the south-west and Kelson to the east in the Hutt City District. Winstone Aggregates is working with Greater Wellington on restoration programmes.

Baring Head (East Harbour Regional Park) KNE

The Baring Head KNE is 256ha. It is primarily owned by Greater Wellington, but some areas are owned by the Tupoki Takarangi Trust and we work collaboratively with this trust to plan and implement activities.

The area has a number of high ecological values. It is one of the top coastal ecosystem sites in the region. It has uninterrupted sequences of different ecosystems ranging from coastal and valley escarpments through to the coast. Although highly modified by historic and current farming practices, it retains many components of native flora and fauna.

Some of the ecological values include its ecological connections – the KNE contains several distinct ecosystems which provide a link to other similar sites nearby: Parangarahu Lakes and Pencarrow dunes to the north and Turakirae Head to the south-east. The KNE also contains the lower reaches of the Wainuiomata River, which is a natural connection to the inland catchments.

It has naturally uncommon ecosystems including coastal turn, stony beach ridges, dune slacks, stable sand dunes and a coastal lagoon.

It contains threatened ecosystems according to the Land Environment New Zealand national environmental classification rates, and threatened species including birds, fish, lizards and invertebrate species.

Kaitoke Regional Park KNE

The Kaitoke Regional Park KNE site is recognised as a regionally important because it contains a large area of mature indigenous forest representative of the original Akatarawa-Hutt Valley vegetation types and low altitude podocarp/broadleaved forest, hard/red beech forest and other hardwood types. It also contains s one of the few remaining lowland forest remnants of its type in the Wellington region. The KNE site also contains several threatened plant species.

Although the composition of the forest on the rising hill country has been modified by selective logging and the impacts of pests, the forest types present, prior to human arrival, still remain.

Queen Elizabeth Park KNE

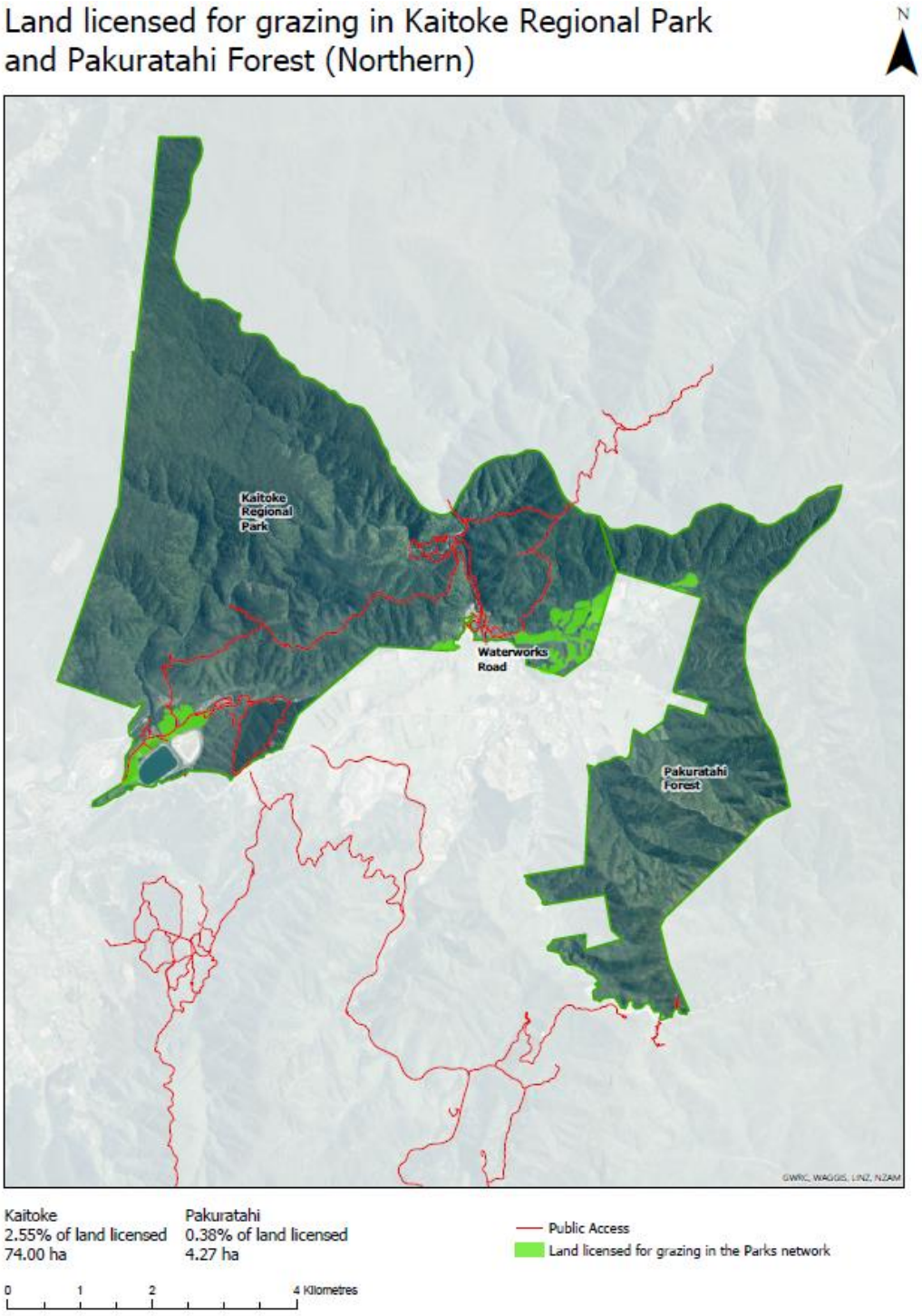
The total combined area to be managed under this KNE Plan is 133 hectares.

QEP's KNE has been identified as a priority for Greater Wellington because of the high ecological values it possesses.

These include:

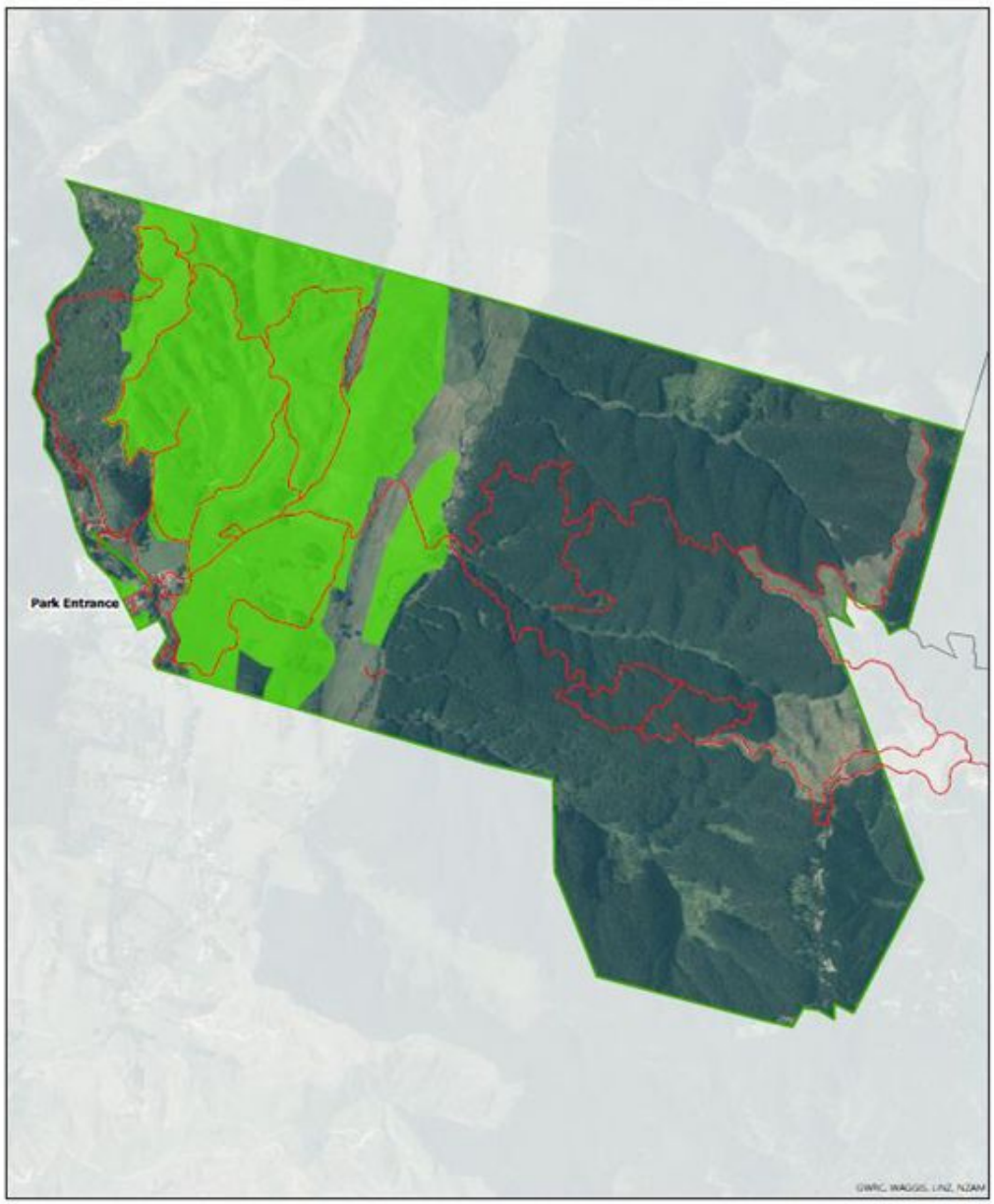
- One of the last unmodified dune ecosystem of the Kāpiti Coast, a remnant of now rare dune forest, and estuarine and coastal wetland habitats
- Threatened and rare (naturally uncommon) ecosystems, including ephemeral wetlands (nationally critical), active sand dunes (nationally endangered), stable sand dunes (nationally endangered), dune slacks (nationally endangered) and estuaries (nationally vulnerable)
- Land Environment New Zealand's (LENZ) national environment classification has identified the entire QEP including the KNE areas as being in the top two threatened land environment categories - acutely threatened and chronically threatened
- Threatened species, including four species of native freshwater fish, six species of native birds, and two species of native plants. The KNE's ecological context, being in close proximity to the Paekākāriki Escarpment KNE and Mataihuka (Raumati Escarpment) Reserve. This allows for the mutually beneficial dispersal of seed and pollination of plants between sites. It is also likely that these sites, along with the Waterfall Road KNE, provide key stepping stones for native birds moving between Kāpiti Island and the Akatarawa Range.

Appendix 2 – Plans of the land licensed for grazing in the parks

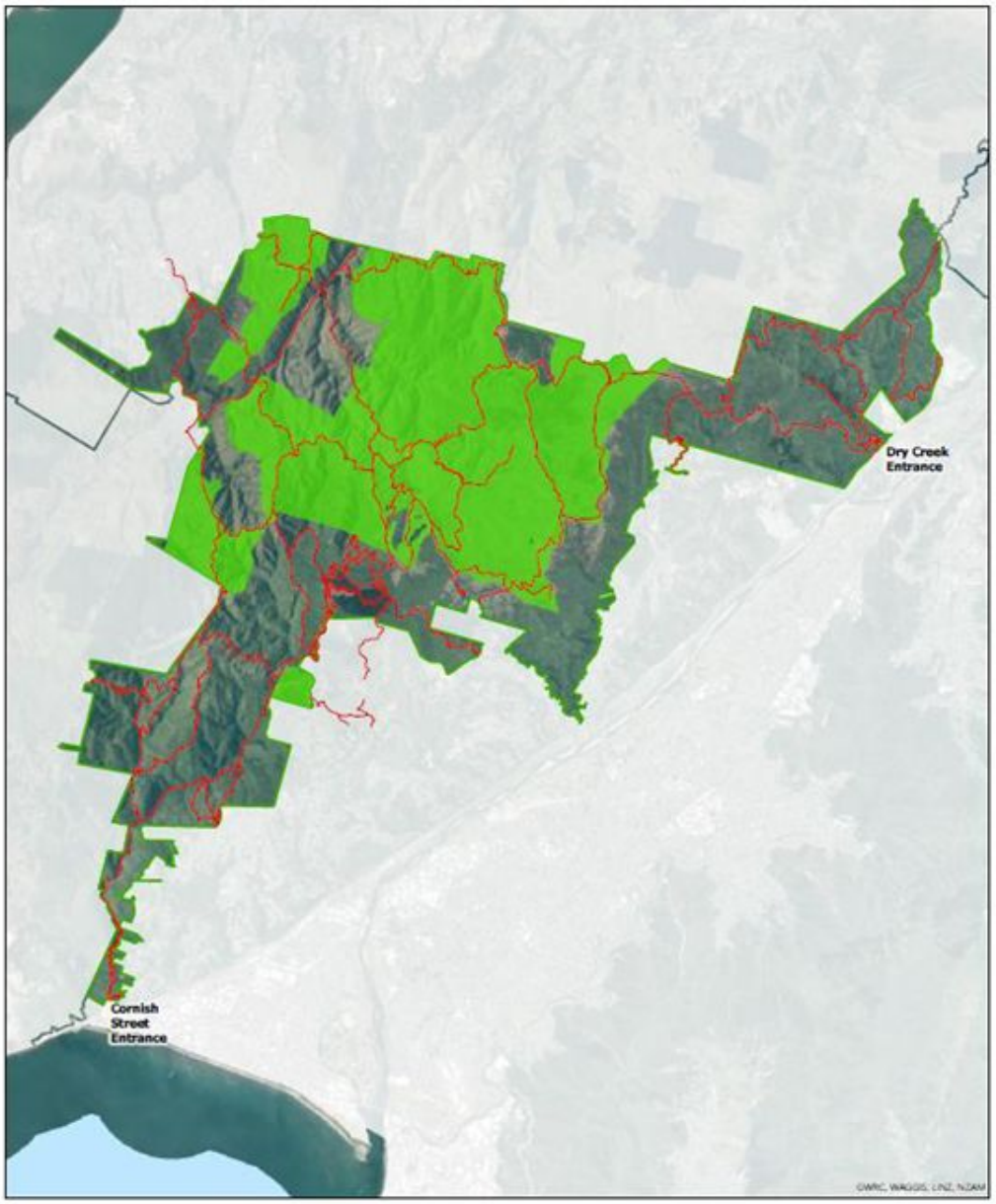


Land licensed for grazing in Queen Elizabeth Park

Land licensed for grazing in Battle Hill Farm Forest Park



Land licensed for grazing in Belmont Regional Park



Land licensed for grazing in East Harbour Regional Park

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Wellington Regional Water Board Act (1972)

greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

Report	**2018.162**
Date	26 April 2018
File	CCAB-10-496
Committee	**Environment**
Author	**Kat Banyard, Project Advisor, Suze Keith, Project Advisor & Tim Sharp, Project Manager**

Whaitua Programme update - May 2018

1. Purpose

To provide information to the Environment Committee on the status of the three active whaitua projects and any key upcoming work.

2. Background

The whaitua process is a community-led, collaborative planning process to address a number of land and water management issues and carry out GWRC's obligations under the National Policy Statement for Freshwater Management (NPS-FM). The programme aims to improve the integration of activities and achieve better resource management practices that reflect local aspirations.

The Wellington Region has been divided into five whaitua or catchments. Whaitua committees, consisting of community members, iwi representatives, partner representatives, and GWRC representatives will make recommendations to the Council through a Whaitua Implementation Programme (WIP) report. A WIP will contain strategies and actions that will form a programme of work for the management of land and water in that catchment.

There are currently two committees operating: the Ruamāhanga Whaitua Committee and Te Awarua-o-Porirua Whaitua Committee. Council established the Wellington Harbour and Hutt Valley Whaitua Committee as an advisory body in December 2017.

A Collaborative Modelling Project supports each Whaitua Committee by feeding knowledge into their decision-making process. Experts in the various topic areas (for example ecologists, economists, social scientists) work collaboratively to ensure information and data is up to date and to provide expert advice to the Whaitua Committee when required. The project involves partnering with mana whenua as well as having significant iwi and community input, as well as input from relevant stakeholders.

3. Ruamāhanga Whaitua

3.1 Progress since last update

3.1.1 Developing water allocation policies

In February and March 2018 the Ruamāhanga Whaitua Committee engaged on the significant proposals within their preferred approach to water allocation. The focus was on the proposals to raise minimum flows in the Upper Ruamāhanga River and the Waipoua River and to seek greater restriction of Category A groundwater users at minimum flow. The Committee invited those water users who would be directly affected to a series of community meetings and drop in sessions. These were well attended, with between 15 and 30 water users at each meeting. The Committee then followed up with a further discussion with 20 water users in early March who had put together written responses to the Committee's proposals. The main concern from users was the impact on their reliability of supply which will be significant, and consequently the economic impact on them and the wider Ruamāhanga economy.

Following this engagement the Committee spent several workshops refining their policies, taking into account the feedback from those who would be directly affected and the needs and values of the wider community. The Committee agreed a transition was needed when implementing the changes to allow time for adaption due to the significant impact on reliability of supply. The Committee has agreed to step the raising of the minimum flow in the Waipoua River over a 10 year period, to step the raising of the minimum flow in the Upper Ruamāhanga over 20 years, and to introduce a 100% cease take for Category A groundwater users after 10 years. Appropriate reviews would need to be undertaken every 10 years.

The Committee's decisions have been communicated back to the community. Any further discussions on these policies will happen through the engagement on the whole WIP.

3.1.2 Engagement on the 'whole package' of the WIP

On 14 April the Ruamāhanga Whaitua Committee spent the day at Papawai Marae listening to mana whenua and their feedback on the Committee's proposed recommendations to date. There was a robust discussion about the involvement of mana whenua and hapu/marae at the sub-catchment (freshwater management unit) level.

On 24 April the Committee met with stakeholders to update them on their recommendations and asked for feedback. The workshop was well attended with 22 stakeholders present from a range of organisations. Stakeholders were generally positive about the overall direction of the Committee's work but were looking for further detail which will be provided at a follow up workshop in May.

An outline of the WIP, along with the draft freshwater management units, and freshwater objectives has been provided to the community and stakeholders and is included in attachment 1 for your information.

Meetings to date with partners, stakeholders and the community have strongly identified the need for ongoing community conversations to implement change beyond completion of the WIP in June. This aligns with our current thinking to enable catchment communities who will become a key feature of implementation going forward.

3.2 Key work in the coming months

3.2.1 Engagement on the 'whole package' of the WIP

The Ruamāhanga Whaitua Committee will continue to engage on the contents of their WIP in the coming month. The Committee has three community meetings in early May confirmed and is planning follow up meetings with mana whenua and stakeholders in mid to late May. The Committee is also planning two community meetings with hill country farmers to explain how the proposals will affect them and meetings with territorial authorities.

3.2.2 Completion of the WIP and presentation to Council

Officers are currently working with the Ruamāhanga Whaitua Committee to draft the chapters that will make up the WIP report and to finalise any outstanding policy issues. At their 14 May 2018 workshop the Committee will be considering a whole draft report. It will then be further refined and any changes as a result of engagement with mana whenua, stakeholders and the community will be incorporated.

The WIP will include the following chapters - introduction, freshwater objectives and freshwater management units, overarching themes, river and lake management, managing contaminants – discharges and land management, and water allocation. The chapters may change as further iterations are completed. A summary of no more than five pages will be produced as an alternative simpler option for those who are more interested in the overall story than the finer details.

The content of the WIP is scheduled to be considered in more detail in Council and Te Upoko Taiao workshops in early June, followed by the WIP being presented to Council in late June.

4. Te Awarua-o-Porirua Whaitua

4.1 Progress since last quarter

Drawing on the comprehensive knowledge they have acquired over the previous 3 years, Te Awarua-o-Porirua Whaitua Committee has agreed on draft objectives for the 23 freshwater bodies in the catchment for five attributes - *E.coli*, ammonia toxicity, nitrate toxicity, dissolved zinc toxicity and dissolved copper toxicity.

Committee and project team members have engaged with Porirua City Council (PCC) officers and councillors to update them on the current state modelling

results, discuss the Committee's overall direction and the implications for PCC. A similar presentation was made to PCC's District Plan Developer Focus Group.

Committee and project team members hosted a well-attended meeting with rural landowners in February which canvassed a wide range of subjects including the whaitua process and the role of the modelling, water quality monitoring, the benefits of retiring or pole planting erosion-prone land, and citizen science opportunities.

4.2 Key work in the coming months

At the next workshop the Committee will complete their draft freshwater objectives for the macroinvertebrate index, periphyton and fish, and then will move onto the coastal water current state analysis and objective setting. It is expected this will be completed by the end of June.

An engagement programme is in place to continue to raise awareness about the whaitua progress and the implications for institutions. Workshops with Wellington City Council officers and Councillors will be undertaken by the Committee and project team in May, as well as a meeting with the Senior Leadership Team of Wellington Water. A second workshop with PCC Councillors will also be held.

A second rural landowners meeting will be held in June, with a presentation on the freshwater objectives and what these water quality limits are likely to mean for this community. A citizen science session is also being planned as a result of the interest expressed at the first engagement.

More broadly, the whaitua project team are working with the Sustainability Society (a technical interest group of the Institution of Professional Engineers of New Zealand) to deliver a workshop on water sensitive urban design in early May with GWRC Councillors. This will be presented by the Australian Cooperative Research Centre for Water Sensitive Cities. This was a topic discussed at a previous Environment Committee at which Councillors requested a workshop.

5. Wellington Harbour and Hutt Valley Whaitua

5.1 Progress since last quarter

Officers have progressed discussions with Taranaki Whanui, Ngati Toa, territorial authorities and Wellington Water, all of whom have indicated strong interest in this whaitua and have selected nominees for the Committee or are in the process of doing so. Mana whenua are close to reaching agreement on the name for the whaitua.

In response to concerns from mana whenua around capacity and resourcing, as well as feedback from others involved in the two whaitua to date and the Aqualinc consortium's recommendations in their final report, opportunities for this Whaitua Committee process to operate more efficiently are being considered. These include:

- Collating all currently available information into a database and packaging information into reports for the Committee so it can access it immediately once it is established. Information gaps are also being considered through this process.

- An urban streams freshwater quality and ecology state, trends and pressures report is being prepared.

- Mana Whenua consider that there is a great deal of information available on cultural values and interests, including in the PNRP, Treaty Settlements and in previously prepared Cultural Impact Assessments and are considering how to collate that information into a single report.

- In the project planning and process design, officers are looking at options for reducing the overall timeframe or the time commitment of Committee members.

External engagement has started with community stream days, Owhiro Stream being the first on 5 May, followed by Wainuiomata and Makara (dates tbc) and streams in the wider region to follow.

5.2 Key work in the coming months

The focus of work in the coming months will be:

- Continuing developing buy-in with partners, including information collation for the Committee and co-designing the process.

- Initial engagement and communication activities including Stream Days and promoting the project on Social Media.

- Developing support material for Councillors to help in conversations when being asked about the Whaitua and set up

- Selection and appointment of Committee members.

5.2.1 Timeframe for selecting and appointing Committee members

The selection and appointment of Committee members will follow the process agreed by Council when the Committee was established. The timing for selection of Committee members to occur is:

<u>May 2018</u>

On-going planning, development of engagement materials and meetings with the relevant iwi, territorial authorities and Wellington Water.

Promotion and socialisation of the whaitua process and of the selection process to find community representatives for the Committee.

<u>June 2018</u>

Confirmation of partner organisation Committee representation.

Applications for community members open.

Shortlisting and interviewing of community candidates.

July 2018

Successful community candidates and partner representatives appointed to the Wellington Harbour and Hutt Valley Whaitua Committee by Council.

August 2018

First Whaitua Committee meeting

6. Communication

No external communication is proposed as an outcome of the consideration of this report.

7. Consideration of climate change

No decision is being sought in this report.

The matters addressed in this report have been considered by officers in accordance with the process set out in the GWRC Climate Change Consideration Guide.

7.1 Mitigation assessment

Mitigation assessments are concerned with the effect of the matter on the climate (i.e. the greenhouse gas emissions generated or removed from the atmosphere as a consequence of the matter) and the actions taken to reduce, neutralise or enhance that effect.

Officers have considered the effect of the matter on the climate.

Officers note that the matter currently does not affect the Council's interests in the Emissions Trading Scheme (ETS) or the Permanent Forest Sink Initiative (PFSI). However, recommendations made by the Whaitua Committees could provide a co-benefit of mitigating climate change. For example, the retirement and planting of erosion-prone land could give effect to sequestering carbon, however this will not be able to be further analysed until the Committees make their recommendations. Officers involved in this work will ensure this is considered in the final WIP reports.

7.2 Adaptation assessment

Adaptation assessments relate to the impacts of climate change (e.g. sea level rise or an increase in extreme weather events), and the actions taken to address or avoid those impacts.

Consideration of climate change adaption has been built into the collaborative modelling projects which support each whaitua project.

Climate change impacts on rainfall and catchment hydrology are being modelled and will be applied to the scenarios developed by the Committees. This information will allow for analysis of changes in contaminant generation, water allocation and flow, and the effectiveness of mitigations (such as storm

water treatment, erosion and sediment control) on a catchment-by-catchment basis.

8. The decision-making process and significance

No decision is being sought in this report. This report is for Environment Committee members to receive an update on the progress of the three whaitua projects.

8.1 Engagement

Engagement on this matter is unnecessary.

9. Recommendations

That the Committee:

1. ***Receives** the report.*

2. ***Notes** the content of the report.*

Report prepared by:	Report approved by:	Report approved by:
Kat Banyard, Suze Keith & Tim Sharp	**Alastair Smaill**	**Nigel Corry**
Project Advisors	Team Leader - Whaitua	General Manager, Environment Management Group

Attachment 1: Whaitua Programme Update May 2018

Outline of Ruamāhanga Whaitua Committee Whaitua Implementation Programme (WIP)

This document sets out the key points that will form the Ruamāhanga Whaitua Committee's Whaitua Implementation Programme (WIP) report and provides a brief explanation of these points in more detail.

Freshwater objectives

- **Set freshwater objectives across 21 freshwater management units (FMU).**

  See further information:

  - *Draft map of the freshwater management units*
  - *Summary table of draft freshwater objectives (the water quality we want to achieve)*
  - *Narrative draft freshwater objectives for fish and mahinga kai*

Managing contaminants – discharges and land management

- **Set load limits for each FMU for nutrients and sediment as rules in the regional plan, and set concentration limits for E. coli as rules in the regional plan**

  The Committee will recommend limits for nitrogen, phosphorus, sediment and E.coli – the maximum amount of resource use in a sub-catchment. Collectively, those within the sub-catchment are required to stay within the limit as the limit will become a regulation in the regional plan (the Proposed Natural Resources Plan). The limits are based on the maximum amount of resource use that can happen while allowing water quality outcomes to be met. Limits are required to be set by national policy direction.

- **Manage point sources with discharge standards consistent with limits and achievement of freshwater objectives**

  Point sources are discharges from a single, identifiable point e.g. treated water from a wastewater treatment plant being discharged from a pipe into a river. The Committee is recommending that quality standards be set for all point source discharges to ensure limits, and ultimately water quality outcomes in that sub-catchment can be met.

- **Manage non-point sources of contaminants through the management of land use activity by rigorous promotion and implementation of 'good management practice'**

  Non-point sources are diffuse sources of contaminants that don't discharge from a single point which makes them harder to manage. The Committee supports the promotion and implementation of 'good management practice' in both the urban and rural context. What constitutes good management practice varies with different land uses and evolves over time allowing for continuous improvement.

- **Promote and support the formation and operation of 'catchment communities' as a key mechanism to achieve limits in each FMU**

  The Committee supports a community led approach to achieving limits that is largely non-regulatory. Catchment communities are groups of local people who decide to work together to take action to improve water quality in their area. Groups are already forming in the catchment of their own accord e.g. at the Kourarau dam. The Committee supports the formation and operation of these groups.

- **Promote and support the implementation of farm planning as a primary tool of management at a farm scale. Whether farm plans will be regulated is still to be determined**

  Farm plans are a widely used tool in contemporary farming practice. The Committee supports further planning with farmers to create integrated plans for their farms that help achieve the freshwater objectives of their FMU. The Committee's options are either to regulate and require farmers to have farm plans or to use them as a voluntary tool to improve practice.

- **Regulate 'high risk' land use changes and intensification**

  Land use change that has the potential for increased discharge of contaminants and specific 'high risk' land use activities may need to be regulated to ensure catchment limits are met. The Committee is still developing their approach around this.

- **Manage urban stormwater through the consenting process in the Proposed Natural Resources Plan**

  The Proposed Natural Resources Plan (PNRP) sets out an approach to managing stormwater that's a shift from the status quo. It requires local authorities to apply for a 'global' consent to manage all their stormwater network discharges together, to ensure cumulative effects are managed. It also implements a two stage consenting process. In the first stage local authorities are required to collect information on the quality of discharges from their network and to develop a Stormwater Management Strategy. The second stage is focused on managing the stormwater network to address issues affecting water quality.

  Stormwater from large sites e.g. state highways, and from land use e.g. subdivision is managed separately through other provisions in the PNRP.

- **Ensure wastewater discharges to be largely land disposal**

  All discharges of wastewater should be to land. There should be no wastewater discharges to the river.

- **Reduce sediment loads through riparian management to reduce stream bank erosion across the whaitua, and accelerated erosion mitigation in those FMUs contributing the greatest sediment loads from hill slope erosion (Taueru, Huangarua, Eastern hill streams, Whangaehu and Kopuaranga).**

Losses from hill slope erosion in the 'top 5' FMUs (Taueru, Huangarua, Eastern hill streams, Whangaehu and Kopuaranga) amounts to around 66% of the entire annual sediment load in the whaitua coming off land not under native bush. Across all FMUs in the whaitua, streambank erosion contributes around 17% of the total annual load off land not under native bush. Currently, around 70% of the total load comes from non-native land, meaning twice as much sediment is discharged into the catchment from pastoral, lifestyle and urban land uses than from native bush in a year. The Committee's approach aims to target those high risk FMUs for hill slope erosion and for all FMUs to manage streambank erosion. This will mean annual sediment load reduction targets will be set for all FMUs with the aim of achieving these targets by 2050.

- **Align funding and support of hill erosion and riparian management for stream bank erosion mitigations in line with FMU sediment reduction targets**

  In order to achieve the sediment targets for each FMU, the Committee is recommending further sub-catchment planning in the 'top 5' FMUs to identify how to best achieve these reductions. To support both this implementation with communities and to ensure riparian planting happens effectively and extensively in order to reduce stream bank erosion, the Committee recommends GWRC aligns their support of erosion management to align with these targets and sub-catchment plans.

- **Improve information and accessibility of this information of sediment loss from land uses, impacts on river and lake health and progress of sediment mitigation activities**

  As part of enabling communities to understand how sediment mitigation activities are progressing, there is a need to improve the data and access to data on sediment losses across the whaitua. In line with this, further understanding of the impacts of sediment on in-stream and lake values is required to ensure limit setting processes in the future are improved.

- **Greater Wellington Regional Council (GWRC) set up and operate fit for purpose discharge and contaminant accounting system as required by the National Policy Statement for Freshwater Management (NPS-FM)**

  Greater Wellington Regional Council is required by national policy to establish and operate a freshwater quality accounting system. The aim is to improve information on the sources of contaminants and improve transparency by it being easily accessible by the public. The Committee has used the information available to date when setting their freshwater objectives and limits.

- **Collect nutrient discharge data at a sub-FMU scale by regulation**

  Properties over a certain size will be required to provide regular nutrient discharge data to GWRC. GWRC will collect this information to operate a freshwater accounting system as required by national policy, to determine whether nutrient limits are being met, and to assess the effectiveness of the policies recommended by the Ruamāhanga Whaitua Committee. It is also essential information to use when determining whether to introduce an allocation regime in the future.

- **Greater Wellington Regional Council reviews the need for a nutrient allocation regime 10 years post Plan Change**

  The Committee does not want to implement a nitrogen allocation regime (i.e. individual landowners being assigned a right to discharge up to a certain amount of nitrogen) at this time. The Committee favours a more non-regulatory approach where the community works together to stay within an overall sub-catchment nitrogen limit alongside rules around land use change and potentially other land use activities to ensure catchment limits are met. This decision will be reviewed in 10 years' time. At that time an allocation regime might be a more suitable way of managing nitrogen if current water quality outcomes aren't being met.

- **Emphasise and promote restoration of aquatic habitat and riparian margins**

  Alongside the reduction of contaminants, the Committee strongly supports the active promotion and support of improving aquatic and riparian habitat in order to achieve the Ruamāhanga freshwater objectives. For instance, reductions in periphyton will be met through both the reduction in nutrients reaching waterways and the effective shading of streams through extensive riparian planting to reduce temperature and sunlight.

River and lake management

- **"Slow water down in the catchment" and promote groundwater recharge**

  The Committee supports an integrated water management approach for the Ruamāhanga whaitua. Such an integrated, catchment-wide system would aim to increase ecological and social health and wellbeing as well as improving water use reliability and resiliency to the pressures of changing weather systems under climate change. This would bring together multiple management options over the long and short term, rather than dependency on any one mechanism. Management options for lakes and river management could include attenuation of water in soils, wetlands, lakes and groundwater systems across the catchment. Other options could include integrated water storage mechanisms and improved water use efficiency.

- **Restore Lakes Wairarapa and Onoke with emphasis on "in-lake" methods**

  Restoring the connection between the Ruamāhanga River and Lake Wairarapa would be a critical part of restoring the relationship between and mauri of both water bodies. For both lakes, the existing contaminant loads, changes to hydrodynamics and ongoing contaminant loads all contribute to poor ecosystem health and much diminished mahinga kai values. The modelling points to the role of 'in-lake' management methods in restoring the health of the lakes alongside reductions of contaminants reaching the lakes from land use activities and discharges.

- **Investigate further options for restoring the Ruamāhanga River flow into Lake Wairarapa, maintaining higher lake levels and different lake opening regimes.**

  Modelling has shown positive signs that changing the hydrodynamics of Lake Wairarapa could be an effective way of improving the health of the lake from its currently very poor state. Changing the lake's hydrodynamics could include restoring the river flow into the lake, maintaining higher lake levels and different lake opening regimes. Substantial further investigation should be undertaken to explore these options, the impacts of any such changes and to identify feasible options for mana whenua and the community to consider further.

- **Promote wetland restoration**

  Wetland restoration could play an important role in the whaitua for improving ecosystem health and mahinga kai values and for contributing to the overarching aim to 'slow water down' in the catchment and retain more water in soils. Options could include constructed wetlands for flood detention and restoring wetland vegetation in river corridor bends.

- **Seek opportunities for enhancing natural character of rivers**

  Alongside improvements to water quality attributes and flow, improving the habitat of streams and rivers will be a vital part of achieving the Ruamāhanga whaitua freshwater objectives. For example, increasing riparian margins will play a vital role in increasing stream shade and reducing water temperature, which in turn reduces nuisance algae growth. Enhancing natural character could include improved riparian vegetation for bank stabilisation, increased shading, and improved pool, run, riffles sequences in rivers.

Water allocation

- **Base water allocation largely on existing regime in proposed Natural Resources Plan**

  The proposed Natural Resources Plan sets minimum flow levels and allocation amounts for the rivers and streams in the Ruamāhanga Whaitua. Minimum flow levels are the level at which takes from the river must cease and allocation amounts are the amount of water available to be taken from the river.

- **Minimum flow levels set to provide 90% habitat protection for panoko (torrentfish).**

  Minimum flow levels are typically set using measures of ecological health. The amount of habitat available for fish when flows are low is often used as the measure. By providing a level of protection to fish, you are also providing for other values such as cultural or recreational. The Committee had a choice about what fish species to use to set the minimum flow levels and the level of protection that minimum flow should provide. Panoko (torrentfish) was selected as the measure as they are found widely throughout the Ruamāhanga Whaitua and are a sensitive species.

  Most of the minimum flow levels in the pNRP are close to or already achieve the desired level of protection for the rivers and streams in the Ruamāhanga Whaitua. However, the minimum flow levels in two rivers (Upper Ruamāhanga and Waipoua) are well below the 90% protection level.

- **Raise minimum flows levels in several rivers, including the Upper Ruamāhanga (20 year transition) and Waipoua (10 year transition)**

  To provide for 90% habitat protection at low flows the minimum flow levels in the Upper Ruamāhanga and Waipoua need to be raised (currently they sit around the 70% protection level). Increasing the minimum flow levels means water users are likely to be required to stop taking water more frequently.

  To ensure water users have time to adapt, the new minimum flows will not come into place immediately. In the Upper Ruamāhanga, there will be no change in the minimum flow level for 10 years. After 10 years and then at 5 yearly intervals the minimum flow will increase by approximately 280L/s each step to get to a new minimum flow of 3250L/s.

  In the Waipoua there will be no change in the minimum flow level for 5 years. After five years and again at 10 years the minimum flow level will increase at each step by 45L/s to get to a new minimum flow level of 340L/s.

  A small increase (10L/s) in the minimum flow level for the Kopuaranga River is also proposed.

  Minimum flow levels, where group or community water supplies have to reduce to take to the health needs of people, will increase in the Waingawa, Waiohine and Tauherenikau Rivers. There is no change to the minimum flow levels for other users in these rivers.

- **Further restrict Category A groundwater from pNRP to cease take at minimum flow levels (10 year transition)**

  Category A groundwater takes are considered to be those groundwater takes that have a direct connection to the nearby river or stream, i.e. pumping from the bore has an effect on the nearby river, stream or lake. Allowing Category A groundwater users to continue to take water and affect the nearby stream when the flows are low does not provide for instream values.

  In 10 years' time, Category A groundwater takes must cease their take when the nearby river or stream reaches its minimum flow level. (Currently, Category A groundwater takes must restrict their take by 50% when the nearby river or stream reaches its minimum flow level).

- **Further investigations of Category A groundwater takes**

  Greater Wellington Regional Council will undertake further investigations to ensure those groundwater takes classified as Category A do have a direct connection with a nearby river, stream or lake.

- **Reduce the permitted activity threshold for taking water to 5 cubic metres per day and cease permitted takes at minimum flows**

  The current permitted take (no resource consent is required) is 20 cubic metres per day and this considerable volume (in addition to reasonable domestic use and animal drinking water) is hard to justify where catchments are at, or in some cases, above full allocation.

  Water users are able to take water for reasonable domestic use and animal drinking water without requiring resource consent. In addition to these uses a water users may take an additional 5 cubic meters of water per day for other uses.

- **Appropriate storage at a range of scales**

  Storage can range from rain water tanks supplying household water to larger on farm storage for irrigation, or aquifer recharge.

- **Clearly set minimum flows on all small streams in whaitua (often 90% MALF default initially) and carry out minimum flow investigations in small streams where use pressure is occurring.**

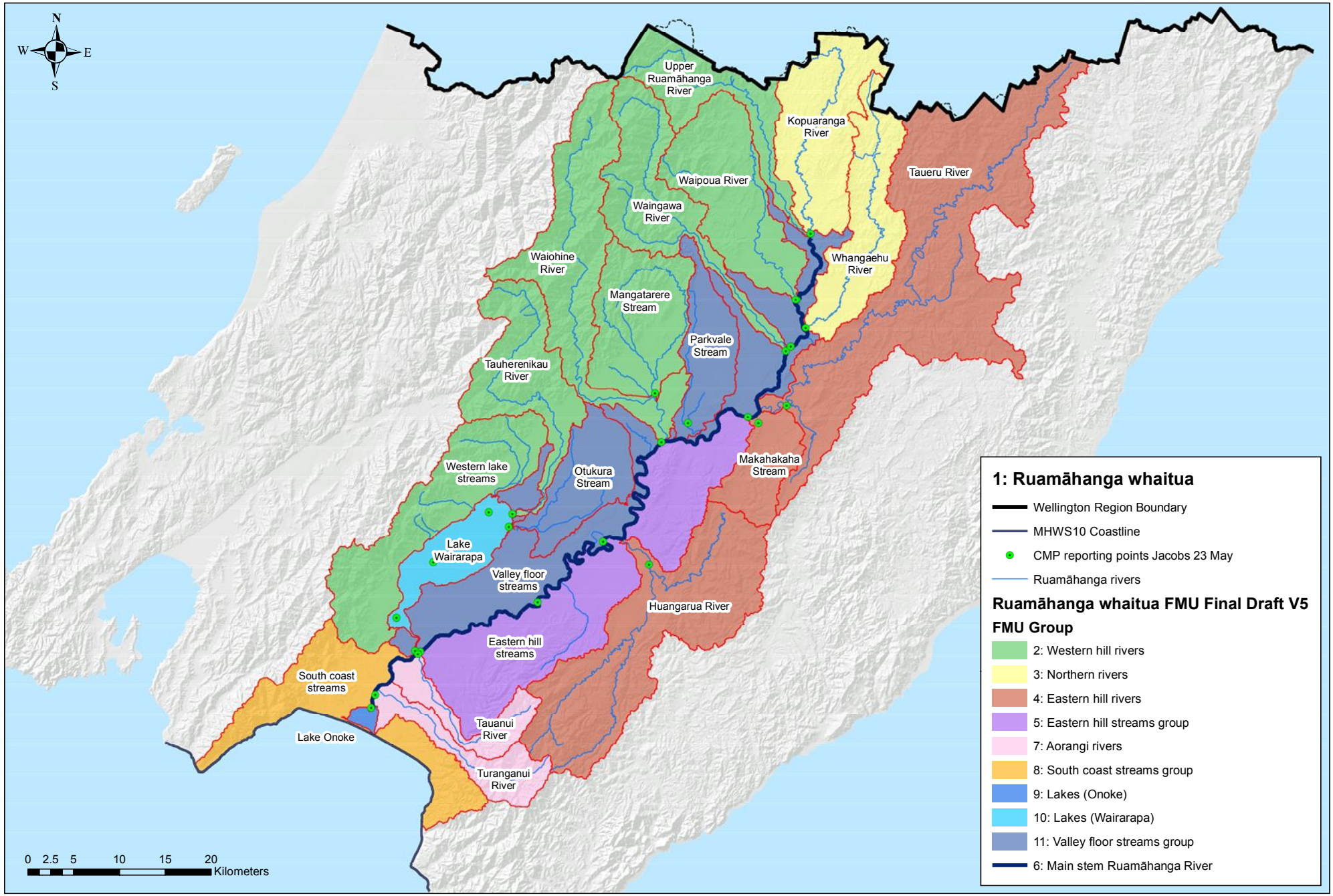
  Undertake targeted investigations in the Parkvale Stream, Booths Creek, Makoura Stream, Kuripuni Stream, Tauanui and Turanganui rivers to determine the specific minimum flow level requirements and allocation limits for each river or stream. Outcomes of the investigations will be implemented through plan changes and review of consent conditions.

- **Ensure appropriate conditions on resource consents for taking water to keep up with policy settings**

  Conditions on longer term consents will be reviewed to ensure they incorporate any changes to minimum flow requirements.

- **Use consent review conditions and water shortage directions especially where adverse effects are occurring**

  On occasions when adverse effects are occurring in a particular river or stream, water shortage directions (under the Resource Management Act 1991) may be issued to further restricted both consented and permitted water use.



Draft water quality freshwater management units, Ruamāhanga whaitua

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Summary of draft Ruamāhanga whaitua freshwater objectives for rivers

* indicates where current state is based on modelled information or expert best knowledge, otherwise all current state analyses based on monitoring data

River	NOF attributes								Non-NOF attributes		When by?	FMU group
	E.coli	*E.coli*	Periphyton	Periphyton	Ammonia toxicity	Ammonia toxicity	Nitrate toxicity	Nitrate toxicity	MCI	MCI		
	Current state	Objective	Current state	Objective	Current state	Objective	Current state	Objective	Current state	Objective		
Tauanui River	D*	A	C/D*	B	A*	A	A*	A	Fair*	Good	2040	Aorangi rivers
Turanganui River	B*	B	C/D*	B	A*	A	A*	A	Fair*	Good	2040	Aorangi rivers
Taueru River	C	C	D*	C	A	A	B	A	Good	Good	2040	Eastern hill rivers
Makahakaha Stream	A*	A	-	B	A*	A	B*	A	Fair*	Good	2040 (periphyton 2030)	Eastern hill rivers
Huangarua River	B	B	C	B	A	A	A	A	Fair	Good	2080	Eastern hill rivers
Eastern hill streams	-	B	-	B	-	A	-	A	-	Fair	Maintain	Eastern hill streams group
Ruamāhanga - Wardells	C*	C	B*	B	B*	A	A*	A	Fair*	Fair	2040	Main stem Ruamāhanga River
Ruamāhanga - Gladstone Bridge	D	C	B	B	B	A	A	A	Fair*	Fair	2040	Main stem Ruamāhanga River
Ruamāhanga - Waihenga	A	A	B	B	B*	A	A*	A	Fair*	Fair	2040	Main stem Ruamāhanga River
Ruamāhanga - Pukio	B	B	-	B	A*	A	A*	A	Good*	Good	Maintain	Main stem Ruamāhanga River
Ruamāhanga - upstream of confluence with Lake Wai outlet	B*	B	-	B	A*	A	A*	A	Fair*	Fair	Maintain	Main stem Ruamāhanga River
Kopuaranga River	D	C	D	C	A	A	A	A	Fair	Good	2040	Northern rivers
Whangaehu River	D	C	-	C	A	A	A	A	Fair*	Good	2040	Northern rivers
Parkvale Stream	E	C	B	B	B	A	B	A	Fair*	Good	2040	Valley floor streams group
Otukura Stream	D*	C	-	B	B*	A	B*	A	-	Fair	2040	Valley floor streams group
Valley floor streams	-	C	-	B	-	A	-	A	-	Good	2040	Valley floor streams group
Upper Ruamāhanga River	D	C	A	A	A	A	A	A	Fair	Good	2040	Western hill rivers
Waipoua River	B	A	B*	A	A	A	B	A	Fair	Good	2040	Western hill rivers
Waingawa River	A	A	A	A	A	A	A	A	Good	Good	Maintain	Western hill rivers
Mangatarere Stream	D	B	C	B, then A	B	B (top of band)	B	A	Fair	Good	2040 (2080 for MCI)	Western hill rivers
Waiohine River	A	A	A	A	A	A	A	A	Fair	Good	2080	Western hill rivers
Tauherenikau River	A	A	A*	A	A	A	A	A	Fair	Good	2040	Western hill rivers
Western lake streams	-	A	-	A	-	A	-	A	-	Good or better	Maintain	Western hill rivers
South coast streams	-	A	-	A	-	A	-	A	-	Fair	Maintain	South coast streams group

Summary of draft Ruamāhanga whaitua freshwater objectives for lakes

Lake	NOF attributes										Non-NOF attributes						When by?	FMU group
	E.coli	E.coli	Phytoplankton	Phytoplankton	Total nitrogen	Total nitrogen	Total phosphorus	Total phosphorus	Ammonia toxicity	Ammonia toxicity	Trophic level index	Trophic level index	Total suspended sediment	Total suspended sediment	Macrophytes	Macrophytes		
	Now	Objective	Now	Objective	Now	Objective	Now	Objective	Now	Objective	Now	Objective	Now	Objective	Now	Objective		
Lake Wairarapa	A	A	D	C	C	C	D	C	A	A	Very poor	Poor	Poor	Fair	D	C	2080	Lakes
Lake Onoke	B/C	A	B	B	C	B	B	B	A	A	Poor	Average	Poor	Fair	D	C	2040	Lakes

Specific Freshwater Objectives for Fish and Mahinga Kai

These freshwater objectives apply to all the identified water body categories. Particular emphasis is placed upon the extensive nature and important characteristics of small streams, wetlands and backwaters in providing healthy fish habitat and the conditions for mahinga kai species, places and activities to thrive.

Freshwater objectives for rivers

- Protection and restoration of significant indigenous ecosystems including habitat (of lakes and rivers) for threatened/at risk species, migratory fish and inanga spawning (link to Schedule F) Note- existing in the pNRP
- Protect and restore Trout fishery and spawning (areas in Schedule I) Note - existing in the pNRP
- Maintain 90% habitat space at MALF for torrent fish
- Indigenous fish and taonga species are able to access all tributaries of the Ruamāhanga system from the coast and lowland wetlands up to and including first order streams throughout the catchment to complete their life cycle.
- The fish habitat has diverse natural characteristics (e.g. riffles, pools, runs, backwaters, wetlands) required for abundant and healthy indigenous fauna and taonga species.
- Watercress is abundant and healthy, safe to eat and free from spray and other contaminants.
- Marae and mana whenua urban communities have access to abundant and healthy mahinga kai species that are safe to eat and are available in quantities that enable sustainable harvest and support the manaakitanga of Wairarapa marae communities.
- Mauri of waterbodies is enhanced by restoring ecological habitats e.g. riparian planting, improving water quality, healthy and abundant mahinga kai is readily available.
- Threatened fish species and their habitat are recovering and are enhanced to show increase in new populations.
- Removal of pest fish.
- Restore habitats closer to the sea first to better protect indigenous fish.

Freshwater objectives for Wairarapa Moana and Onoke

- Exotic fish populations are at a level where they are not restricting the vitality of indigenous fish populations and the ability of mana whenua to undertake mahinga kai harvest.
- All age classes of kakahi are present indicative of a sustainable population.

- Black flounder and other salt water species are abundant.
- Tuna fishery is restored.
- Onoke mouth is managed in a way (calendar) that meets the needs of migratory (diadromous) fish species and mahinga kai harvest.
- Restore native fish habitat for indigenous fish.

Specific fish species and places

- Wetlands are restored and increased to support thriving mudfish, inanga spawning and tuna populations.
- Western rivers are managed to support longfin tuna and deep pool habitat. Torrent fish are abundant in riffles.
- In Eastern rivers sediment is reduced and habitat increased to enable tuna to thrive.
- Western lowland rivers including the main stem Ruamāhanga have increased habitat to enable inanga spawning, deep pools for tuna and riffles for torrent fish to thrive.
- Urban streams are protected from development and piping to support tuna, kokopu and redfin bully.

Additional (to those in the PNRP) outstanding places

Mahinga kai are abundant and healthy in the following outstanding water bodies of significance to Wairarapa marae, mana whenua and the wider Wairarapa community:

- Makoura Stream
- Kuripuni Stream
- Papawai Stream
- Mangarara Stream
- Carters Reserve
- Turanganui River
- Tauanui River

Education objective for fish

- To improve information and understanding of indigenous fish and mahinga kai, including why they are important in the whaitua.

greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

Report	**18.148**
Date	10 May
File	CCAB-10-493

Committee	**Environment Committee**
Author	**Nigel Corry, General Manager, Environment Management** **Tim Porteous, Acting General Manager, Catchment Management** **Luke Troy, General Manager, Strategy**

General Managers' report to the Environment Committee meeting on 10 May 2018

1. Purpose

To inform the Environment Committee of Greater Wellington Regional Council (GWRC) activities relating to the Committee's areas of responsibilities.

2. Key/Strategic Issues

2.1 1 Billion trees planning

A decision report has been prepared for the 10 May Environment Committee meeting to seek clarification from Council about what scale of engagement with 1B trees is preferred. Land Management staff have begun coordinating with the Wellington Regional Strategy team and envisage a place for the 1B trees topic within our Regional Investment Plan if Council preference to engage with the 1B trees programme is significantly beyond business-as-usual. Staff are involved at a national level attending a 1B trees policy development workshop on 3 May with MPI, and a national 1B trees science needs meeting later in May.

2.2 Environment Land Domain Report

The latest report of the New Zealand's Environmental Reporting Series, Our Land 2018, has just been released by the Ministry for the Environment (MfE). The major finding of the report shows that "the state of our biodiversity and ecosystems and our soil resources is continuing to decline." This is based on national statistics, rather than a regional analysis, but similar issues occur across the country.

It is reported that 97% of wetlands (often home to Threatened or Critically Endangered birds such as the Australasian bittern) in the Wellington Region have been lost. The loss is not just historic but has been attributed to roading projects and farm expansion. The loss in the Wellington region is higher than the national estimate. More information is provided in section 5.3 Environmental Science.

2.3 RiverLink NZTA Consultation on Melling Transport Improvements

In mid-May 2018 the RiverLink project team will begin engagement about the Melling Transport improvement parts of the project. This engagement is being led by NZTA and is the third part of a series of engagement events following on from earlier community workshops about the Flooding and River Design parts of the project, and the Urban and Community Design parts of the project. For NZTA the engagement is part of the development of the Detailed Business Case (DBC) for the Melling Transport Improvements that contribute to the board cross organisation outcomes sought by the RiverLink project. The engagement is being supported by officers from all three organisations and NZTA, GWRC and HCC officers will be present throughout the engagement events.

2.4 Letter from the Minister for the Environment regarding National Planning Standards

David Parker, Minister for the Environment wrote to chairs of Wellington, Canterbury, Bay of Plenty and Taranaki Regional Councils regarding concerns expressed about the National Planning Standards. The letter reiterates the Minister's support for the Standards but does discuss the costs of implementing them and will consider costs when designing an implementation pathway which *may* link to the standard planning cycle.

We remain hopeful that a pragmatic approach will be adopted that recognises the significant implementation costs of these standards.

2.5 Swimmability and the 90% target

Draft targets were released by all regional councils at the end of March which is based on modelling undertaken by the Ministry for the Environment. There is a wide range of percentages nationwide from the twenties to over ninety percent. Wellington is sitting in the top half of the table at 75.2% swimmable projected from current committed actions.

As previously noted, this modelled projection excludes any improvements as a result of plan changes relating to our Whaitua process. The Wellington region's draft targets are available publicly on our website. We are currently assessing the results of our 'What Spot' summer swimming survey (see below), the role of monitoring versus modelling (and where to place our investment) and designing a suitable piece of engagement that brings together these different elements.

3. Catchment Management

3.1 Biosecurity

3.1.1 Myrtle rust

Unfortunately Myrtle rust seems to be widespread in the region and possibly even among the native Ramarama in our regional parks. MPI is working with scientists to look for control methods that could be applied to protect iconic plants and significant sites.

3.1.2 Biocontrol

A number of biocontrol agent releases have been undertaken within the region. Darwin's Barberry weevil was released around Makara and Karori, Tradescantia rust at Battle Hill Farm Forest Park and in Upper Hutt and White Admiral caterpillars were released in Akatarawa to control Japanese honey suckle.

Surveys of biological agents in the region are showing good signs of activity and level of infestation. Broom gall mites surveys showed a 50% site infestation in Lower Hutt and nodding thistle a 99% infestation with the thistle gall fly on all flowers surveyed.

Nodding thistle gall fly larvae at Te Kawakawa station

3.1.3 Check, Clean, Dry (CCD)

The CCD program has been completed for the year. This year focus was put on reaching out to local outdoor groups and clubs to provide information about CCD. A total of four sporting events, two GWRC summer events, and five information sessions were attended.

In addition, information was distributed at five other council events that had an environmental or aquatic theme.

3.1.4 Velvet leaf control

With only two known sites of Velvet leaf in the region, we are confident that eradication can be achieved. Four seedlings were found and controlled at the Hinakura site this year. In early February, a contractor with a dog trained in Velvet leaf detection spent two days in the Wairarapa searching the two infected farms. No further plants were found at either of the sites. Inspections will continue to ensure any seedlings that geminate are controlled.

3.1.5 RHDV1 K5 rabbit virus

Preparations for releasing the RHDV1 K5 strain of the current RHDV1 virus are underway with the release across the Wellington Region planned for late April. Pre-feeding and night counts are taking place before the virus is released. In the meantime the current virus RHDV1 has continued killing feral rabbits in a few places throughout the region. Favourable weather has also provided good conditions for rabbits to breed throughout the summer. Staff have been busy night shooting, fumigating and laying toxic bait for various occupiers.

3.1.6 Mynas

The public have been asked if they can report Myna birds. Seven birds were seen around the Masterton landfill. This is an increase on previous years, and we want to know if these birds are the same ones seen elsewhere in Masterton.

3.1.7 Wasps

Wasps have been very active this season, as predicted by a warm November when nests are being established. Staff have fielded 61 enquires to date compared to 13 this time last year, and have been involved with treating some hazardous nests.

3.1.8 Argentine Ants

Publicity around the Argentine ants at Raumati South has created a lot of interest and kept staff busy inspecting for suspected infestations, providing advice and selling bait to affected landowners to control the ants. More locations have surfaced out of this than we knew existed, and these are being mapped. Effective local control of these ants is achievable if landowners combine efforts and bait the entire infested areas.

3.1.9 Possums

A significant staff effort went into getting the WCC Landfill Gully and Te Kopahau possum control operation back up and running after a combined negotiating effort with WCC and adjoining landowners around control methods. This area supports large numbers of possums and control in this area will limit the re-invasion back in to the areas under intensive management.

A confirmed sighting in the possum free Miramar peninsular was followed up and traps set, monitoring equipment put in place, and night searches done. No results came of this and the possum has not been seen again, so we have assumed that it has either been poisoned or left the peninsula. .

A possum has also been shot at the “possum free” Whitireia Park during routine night shooting. Possums do move along the coastlines from the south and will continue to turn up every now and then without predator proof fences.

3.1.10 Regional Possum and Predator Control Programme (RPPCP)

A total of 76,000 ha of 100,000 ha have been completed to date. Post-operational possum monitoring has commenced. Initial results indicate low possum numbers with possum densities less than targeted 5% RTC.

We traditionally undertake RTC (leg-hold trapping) based possum monitoring to provide an indicator of post-operational possum control success. There are a number of operational areas which have heightened risk of capturing pet cats using an RTC based method especially given they are areas with small lifestyle blocks. A less risky wax-tag method will be used instead for these risk areas.

Some rural occupiers are resisting the use of brodifacoum due to associated risk of residues and secondary poisoning, including livestock risks, despite our very good track record in safe use of this tool. The situation is similar in other regions and there is a strong national drive to improve and develop further tools to ensure continuity of the regional pest control programmes. One of the more promising tools currently in the EPA approval process is diphacinone + cholecalciferol (D+C) and it is likely to act as an effective alternative to brodifacoum.

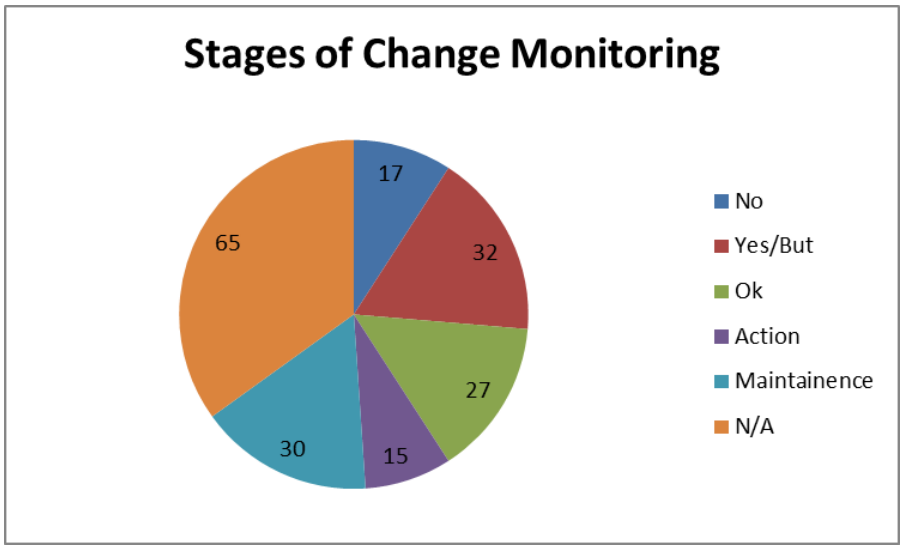
3.2 Land Management

3.2.1 Riparian Programme

The Riparian programme is aimed at enabling landowners to comply with stock exclusion requirements from scheduled Proposed Natural Resources Plan (PNRP) Category 1 sites which begin to take effect on 31 July 2018.

In coordination with GWRC Environmental Regulation it has been agreed that landowners who have made a firm commitment to excluding stock and signing up to the Riparian programme will be given some leeway, if necessary, to meet the date requirements in the PNRP. The programme is making progress with behaviour change and land use decisions leading to stock exclusion actions. However, meeting the 31 July date required by PNRP stock exclusion rules for Category 1 sites is unlikely for all Category 1 sites due to a range of reasons including site complexity, landowner willingness, or timing.

The programme is using a "stages of change" behaviour change monitoring to assess landowners willingness to exclude stock from these sites. The most recent scoring is presented in the chart below.



This chart shows that over half of the sites identified have stock excluded or have landowners taking action. The challenge now is to shift the "No", "Yes/But" and "Ok" landowners towards taking action.

3.2.2 Change to Land Management grant rates

In February, Land Management clients received notification of changes to programme grant rates as a result of the funding and revenue policy review. To date the response to this information has been positive and has not seen an impact on pole or seedling orders for the coming winter season. This is likely to be a reflection of customer good will and the value they place on these services from Greater Wellington.

3.2.3 Wellington Region Erosion Control Initiative (WRECI) Programme

Land Management Advisors will plan the planting of around 25,000 poles this winter as well as overseeing the implementation of twenty-two afforestation and reversion projects, covering 139 ha of erosion prone land.

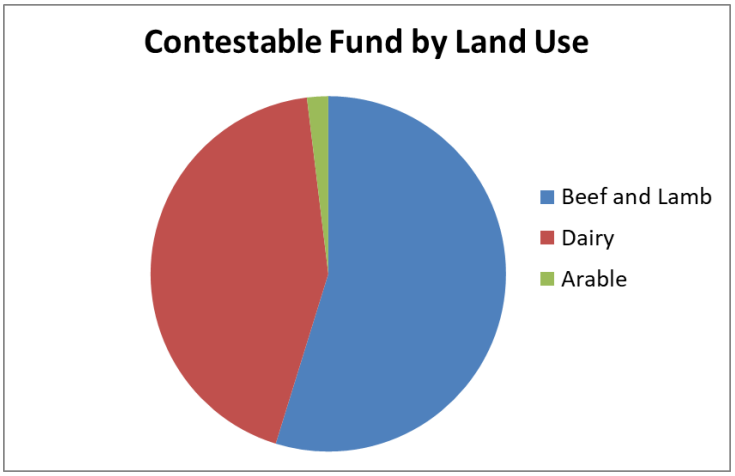
The first helicopter deliveries of poplar and willow poles for both the Awhea-Opuawe catchments in the Wairarapa and the Porirua Harbour catchment will take place in late May. The WRECI programme aims to have delivered and planted close to 8,000 poles by the end of June. The implementation of the programme this season has been assisted with relatively wet conditions across late summer and autumn as well as a strong commodity prices raising farmer engagement with the programme.

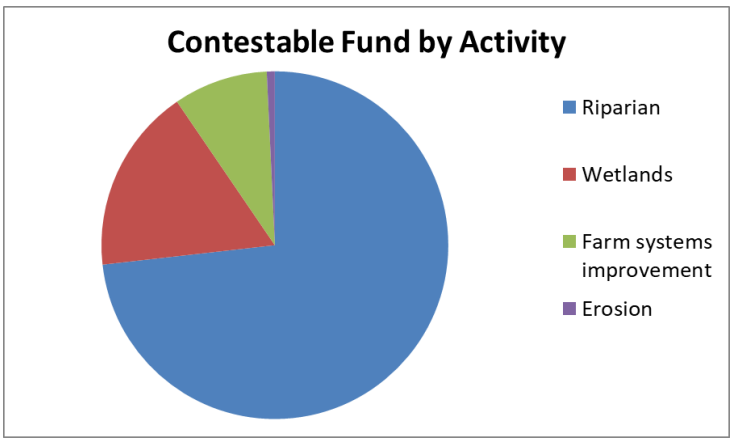
3.2.4 Priority Catchments Contestable Fund

The Priority Catchments contestable fund focuses on implementing projects on farms across the region that will improve water quality and biodiversity values. The catchments are prioritised by those indicated in Method 12 in the pNRP as well as targeted Kapiti coast catchments.

The programme has had an excellent year with a large number of projects, including a range of riparian, wetland, farm systems, or erosion control improvements delivered to benefit water quality and/or biodiversity across the region. The table and figures below break down the money spent on projects by catchment, land use and also by activity.

Catchment	Number of Projects	Project Cost
Priority Catchments		
Kapiti	3	$ 19,733.00
Mangatarere	10	$ 91,889.00
Parkvale	3	$ 42,482.00
Whangaehu	2	$ 16,782.00
Wairarapa Moana	12	$ 128,805.00
Total	30	$ 299,691.00
Non- Priority Catchments		
Non-priority Ruamahanga	11	$ 94,581.00
Eastern Wairarapa	7	$ 33,800.00
Total	18	$ 128,381.00





3.2.5 Te Awarua-o-Porirua Harbour Catchment

Recent work in the Porirua Harbour catchment has seen a focus on increasing awareness of Land Management programmes to lifestyle block owners within the catchment. Many of these small block holders keep livestock and have waterways passing through their properties. Activities will include a mail out of information to inform them of what support is available to improve riparian management and good farming practices. Support will be in the form of advice and a 40% grant towards eligible projects such as stream bank planting to prevent erosion.

Planning is currently underway for poplar and willow planting for erosion control on the larger farms within the harbour catchment. It is anticipated that 1000 poles will be planted this June.

3.2.6 Akura Nursery

Due to the warm but wet summer and early autumn, it is anticipated that the nursery will be producing significantly more than the estimated 26,000 poplar and willow poles. This will support the anticipated extra demand from farmers, particularly due to farmers being in a strong financial position and with good planting conditions forecast.

Building work is about to commence strengthening the mezzanine floor in the main shed and also adding additional floor space. This work is required to meet Building Act regulations as well as to provide additional storage capacity.

New branding has been implemented with a name change from Akura Conservation Centre to Akura Nursery. New signs have been erected and the webpage is about to be reviewed and updated.

3.2.7 Contractor Management

A full complement of nursery and field contractors has been confirmed to deliver the Land Management work programme for winter 2018. In total five contractor crews will be undertaking a mixture of work including, cutting poles, pre and post spraying and planting a mixture of poplar and willow poles, native and exotic seedlings.

3.3 Flood Protection Implementation

3.3.1 RiverLink

RiverLink preliminary design is being prepared for recommendation to Greater Wellington Regional Council and Hutt City Council. Recommendations are programmed to be taken to the respective Councils in June 2018 and July 2018. NZTA plans to recommend the Melling Transport Improvements Detail Business Case to its board late in 2018.

Hutt City Council and GWRC are in the process of confirming their funding commitments through their respective Long Term Plan processes.

The flood protection design components and the 'making places' urban development components have been peer reviewed. The results of these peer review processes will be presented to the respective Councils to support the recommendation process for the preliminary design.

RiverLink participated in a very successful summer events programme, and have commenced scoping work for next year's summer engagement as well as various events planned for the winter months.

Property acquisition for the properties along Pharazyn Street and Marsden Street required for delivery of RiverLink continues to progress ahead of forecasts. 46 of 118 properties identified as required for delivery of the works are now owned by GWRC, and a further 50 are in various stages of the acquisition process.

3.3.2 Te Awa Kairangi/Hutt River Environment Strategy and Action Plan (HRESAP)

The Hutt Valley Flood Management Subcommittee has reviewed feedback from engagement held during Q3. The project team will recommend the HRESAP to the Hutt Valley Flood Management Subcommittee later in May.

Work has commenced in the Taita area of the Hutt River Trail to improve the paths through this reach. This includes consideration of closing off vehicle access to this area to improve safety for pedestrians and cyclists.

3.3.3 Pinehaven Flood Management Plan and Upper Hutt City Council Plan Change 42

Plan Change 42 was supported by Upper Hutt City Council. Work has recommenced to deliver the outcomes of the Floodplain management plan including designation and consent strategy, land entry requirements, and detail design.

Programme for these works has been designed around the appeals programme for the Plan Change to ensure that any issues raised by the appeals process can be considered.

3.3.4 Jim Cook Park Stopbank Upgrade

Jim Cook Stopbank Upgrade is complete, work continues to improve the tracks and planting through and around the area the works were carried out. Retaining good quality grass cover continues to be a challenge and some areas of the

stopbanks will be closed to people and animals for periods to provide better conditions for the grass to establish.

3.3.5 Lower Wairarapa Valley Scheme Update

The engineering works to intercept gravel bedload at the Tauanui River project has been completed. The opportunity for future environmental/planting development involving the community and other GWRC teams is still to be progressed when opportunities arise. In the interim the area will be monitored to see how the existing planting/environment develops.

Landowner negotiations for the Pukio East Dairy Ltd (PEDL) stopbank relocation project are well underway. A start date for construction of the works is dependent on the outcome of these negotiations.

The Whakawhiriwhiri Stream drainage improvement project is still awaiting the resolution of landowner entry negotiations and Soil Conservation and Rivers Control Act 1941 (SCRCA) compulsory entry process. It is doubtful that further works will proceed this financial year. Condition 12(a) of the consent order requires that works shall be completed by 19 December 2018.

3.4 Operations, Delivery and Planning

3.4.1 Western Rivers

Works programmes in the Western Rivers are progressing to programme. Bank edge protection works have been completed on the left bank of the Hutt River at Taita and delivery of rock rip rap for maintenance of both the Hutt and Otaki river schemes about to commence.

Hutt River Edge Protection works - Taita Berms

The Waitohu Stream suffered extensive flood damage as a result of Cyclone Gita and machinery was required to repair the most urgent areas of erosion. This work is in progress and staff are also working with NZTA to do remedial works to the SH1 Bridge.

3.4.2 Wairarapa River Schemes

Wairarapa River schemes maintenance work is on programme. Works have included edge protection work, buffer maintenance and repair work. Rock procurement and storage continues for programmed protection work.

The high demand for gravel extraction in the upper valley continues. Staff have been kept busy identifying further areas for gravel extraction along the reaches where removal of gravel is beneficial to the schemes.

Programmed agrichemical spray maintenance work has progressed across the scheme areas. The Manaia drain had some blockage issues following heavy rain in March. The team have worked alongside the Masterton District Council to clarify roles of each team in relation to the roadside drain. Flood Protection staff will ensure the problem areas are targeted for spray maintenance and are cleared earlier in the programme. The District Council will attend to any blockages in times of flooding.

Manaia roadside drain after spraying and clearing of flood debris

Calibre Consulting Ltd have provided a report with recommendations to remedy the Geoffry Blundell Barrage Gates structural issues for the immediate problem of the concrete spalling around the gate winch motor housings. The report also identified additional spalling on both the barrage structure and the adjacent bridge structure. The bridge structure is a South Wairarapa District Council asset and discussions regarding the report recommendations for this asset will be undertaken with SWDC officers. The extent of the project works will be identified following these discussions.

The Wairarapa Operations Annual River Scheme Management Walkovers have begun. The Waipoua and Waingawa rivers were the first schemes to be completed. All schemes have been scheduled for walkovers to be completed early June. The walkovers provide an opportunity for sharing of knowledge between staff members across the flood protection offices.

3.4.3 Resource Consent Projects

A revised Code of Practice and consent conditions have been sent to the Department of Conservation and Wellington Fish and Game and we await their feedback to see whether the proposed changes have addressed their concerns. Further information has also been provided to Environmental Regulation.

The project to renew the resource consents for the Geoffrey Blundell Barrage Gates continues to progress. The project teams now include representatives from both Iwi and a site visit has been held with Iwi.

We are continuing to progress gravel extraction and minor bank stabilisation works in the Porirua Stream.

3.4.4 Asset Management Projects

The Seton Nossiter Detention Dam culvert renewal project is underway. Investigations will be completed before the end of the financial year with engagement of professional engineering services for culvert renewal options.

Significant progress has been made this quarter with application of the Asset Performance Tool (APT) now applied to the Waiohine, Otaki, Waikanae Rivers. The tool is now being applied to four more river schemes, including the Hutt and Ruamahanga Rivers. The APT work will inform operational and capital works programs and provide risk evidence to support project prioritisation and asset reporting.

Condition ratings have been completed across the region in preparation of Scheme Reporting to various committees in May and the production of work programmes.

3.5 Investigations, Strategy and Planning

3.5.1 TKURFMP

Both work-streams of FMP development - rural and Masterton urban – are continuing.

Workshops were held with MDC and CDC in February to present draft Volumes 1 and 2 and seek feedback and support. MDC and CDC endorsed these documents for public consultation at council meetings in February and March, respectively.

The project team presented Volumes 1 and 2 of the draft FMP to the Subcommittee in late February for support of the documents. The Subcommittee recommended minor changes, but were supportive of the content of the documents and the project team preparing consultation resources. The project team will be looking for endorsement to proceed to public consultation from the Subcommittee in June 2018. The consultation process was delayed due to the LTP consultation occurring in April and May, in particular with reference to the proposed changes to the Revenue and Financing and policy. It was decided it was unwise to consult at the same time, or before any decisions regarding this had been made as there are implications for the funding of the FMP outcomes.

Work continues on hydraulic modelling of the agreed Waipoua hydrology to feed into options development for Masterton. A peer review was undertaken of the hydraulic model in March and minor changes to the model are being made a result of this peer review, they are not expected to have any major impact on the model results.

3.5.2 Waiohine FMP

The main focus to date has been the flood maps. Interim flood maps have now been released, and the focus is currently on mapping a number of sensitivity scenarios to help the Project Team get a handle on uncertainties. This will feed both into design of solutions and final flood maps.

A climate change factor of 16% increase in rainfall intensity by 2090 (10% by 2040) has been agreed within the project team in consultation with NIWA who met with the project team to provide the latest scientific findings. This is different from the 20% increase that is currently GWRC policy and will be reported up to Council for consideration via the Wairarapa Committee.

Stakeholder engagement remains a focus. We have had no Kahungunu ki Wairarapa representative on the Steering Group for several months and have not yet engaged with the local hapu of Kahungunu. This is now a particular focus of the Project Team.

The proposed change to a 70/30 funding arrangement – both for the current and past FMP development work, and the implementation outcomes, has the potential to dominate discussions with the community and we are considering how to manage this topic during the consultation.

All submissions on the previous draft FMP are being re-read by the Project Team. Any matters raised by submitters that aren't being addressed by the current process will be noted and must be closed out.

3.5.3 Otaki FMP review

This work is proceeding significantly behind schedule (by about six months), mainly due to delays in engaging with Nga Hapu ō Ōtaki (NHoO) to agree the scope and limited GWRC/consultant resource availability. These issues have been overcome now. Progress in the past two quarters has been good, with significant areas of progress including:

- Engagement with iwi
- Damages assessment progressing
- Comprehensive review downstream of SH1
- Developing a revised river management approach upstream of SH1
- Comprehensive review of Waitohu works

The current projected completion for this project in Sep 2018 is beyond what is stated in the current LTP (June 2018). Current work is focused on liaison with NHoO, internal FP staff and key stakeholders to develop a draft set of recommendations ready to consult on in June/July.

3.5.4 Mangatarere Stream flood hazard information

Mangatarere Flood Study Area maps have been publicly released. The information is available online and is being used by Carterton District Council. A public drop-in session in April 2018 was well attended (around thirty individuals/separate family groups).

3.5.5 Pinehaven Flood Management Plan and Upper Hutt City Council Plan Change 42

UHCC Plan Change 42 recommendations on proposed objectives, policies, rules, and other methods to address flooding in the Mangaroa River and Pinehaven Stream Catchments have been unanimously confirmed by UHCC. The appeal period for the decision is until 25 April.

4. Biodiversity

4.1 General

- The department part sponsored the Coastal Restoration Trust of New Zealand's annual conference, held in Petone in March. Councillor Jenny Brash spoke at the event and several GW staff gave presentations.

- Planning is underway for the development of a regional biodiversity strategy. Staff have started holding initial meetings with regional partners (including mana whenua, the Department of Conservation and territorial authorities) and wider workshopping with partners and stakeholders is being planned for June. The restoration community will be informed of the project at Restoration Day in May and invited to participate.

- The department will contribute to four talks at the Society for Conservation Biology Oceania conference, being held in Wellington in July. The talks cover collaborative restoration, long term biodiversity management, biodiversity offsetting and novel ecosystems.

- The department has lodged a consent application to divert water from Matthew's Lagoon into Wairio Wetland to improve wetland habitat.

4.2 Biodiversity Management

4.2.1 Key Native Ecosystem Programme

- Two landowners have signed up to include their land in the Raroa-Pukerua Coast Key Native Ecosystem (KNE) site. One landowner has signed up at the Otepua-Paruāuku Wetlands KNE site, which adds 4ha to this site.

- Argentine ant and rabbit control in the Queen Elizabeth Park KNE site resulted in a significant reduction in both these pest populations, helping to protect biodiversity values.

- The Whitireia Park Restoration Group won an annual award for "Best Coastal Community Group" at the national conference of the Coastal Restoration Trust of New Zealand. The award recognises the group's successful dune and coastal wetland restoration efforts at the Whitireia Park KNE site.

Figure 1. Whitireia Park Restoration Group members receiving an award for "Best Coastal Community Group" at the national conference of the Coastal Restoration Trust of NZ for their restoration work in the Whitireia Park KNE site.

4.2.2 Wetland Programme

- Landowners of four significant natural wetlands have signed up to the Wetland Programme.
- Three Restoration Management Plans have been approved, including Northern Lake Wairarapa wetland on the western shores of Lake Wairarapa, Trimble Trust wetland located 16km north of Masterton and Johnsons Road wetland in Whitemans Valley. The Wetland Programme will fund fencing at Northern Lake Wairarapa wetland; ecological weed control and plants at Trimble Trust wetland over the next 3 years; and plants at Johnsons Road wetland over the next 3 years.
- A business case is being developed to expand the Wetland Programme to provide funding for restoration of natural wetlands that are not scheduled in the Proposed Natural Resources Plan (PNRP) and of scheduled natural wetlands on territorial authority land.
- Biodiversity staff made a follow-up visit to three significant natural wetlands on Pencarrow Station. A Livestock Access Plan is currently being prepared to manage stock in these wetlands. Access by stock in this case is deemed appropriate given the low stocking numbers and impracticalities of fencing the site.

4.2.3 Freshwater Fish Programme

- New *National Fish Passage Guidelines* have been developed by NIWA and the Department of Conservation. The Biodiversity department arranged for Dr Paul Franklin (NIWA) to run a series of presentations in April to introduce these guidelines to a range of staff across GW, external organisations and our Iwi partners. Biodiversity staff are now looking into

what might be needed to implement the guidelines at GW, and aim to set up a cross-organisational project team to support this.

Fig 2. Dr Paul Franklin (NIWA) presenting the new *National Fish Passage Guidelines* at workshops arranged by the biodiversity department.

4.3 Biodiversity Advice and Advocacy

4.3.1 Biodiversity Advice

- Staff provided advice to Hutt City Council (HCC) and continue to support their work delineating Significant Natural Areas (SNAs). This advice will help to inform HCC's forthcoming district plan change to incorporate SNAs and associated biodiversity protection regulations in their plan.
- A presentation was given to the PNRP hearings panel in support of the proposed mitigation hierarchy framework and biodiversity offsetting policies. This presentation helped to anticipate and respond to submissions that were in opposition to these provisions.
- Staff coordinated and participated in a third meeting of the officer-level Regional Biodiversity Planning Group. This work continues to improve cross-council collaboration and consistency in implementing Policies 23 (identify significant biodiversity) and 24 (protect significant biodiversity) of the Regional Policy Statement.
- On invitation, staff reviewed the New Zealand Transport Authority (NZTA) draft *Ecological Impact Assessment Guidelines for Highway Projects*. This review commended NZTA for taking steps to improve the biodiversity outcomes from highway construction and offered various suggestions to further enhance outcomes through the use of their document.
- Staff presented the draft national biodiversity offsetting guidance to the BioManagers Group (Regional Council Biosecurity/Biodiversity Special Interest Group) for their approval. This approval was granted with the guidance itself highly commended by the Group. Staff also gave advance

notice of the release of the guidance (later this year) in a presentation at the national New Zealand Planning Institute conference in Tauranga.

- We have received two proposals to translocate lizards to Whitireia Park, one being for development mitigation purposes and one for conservation purposes. These are currently being assessed to determine whether GW will support the proposals. The decision will rest with the Whitireia Park Board.

4.3.2 Collaborative Restoration: Wairarapa Moana Wetlands Project

- Staff attended and presented at a Wairarapa Moana collaboration hui that was hosted by Victoria University students. The hui was aimed at providing the opportunity for people to share information about the operational and research activities around Wairarapa Moana.

4.3.3 Biodiversity Advocacy

- Biodiversity staff are coordinating this year's Restoration Day, which will take place on 26 May at Silverstream Retreat. This annual event celebrates community restoration efforts around the region, and the theme for this year is Connecting Communities - people, plants and pests. Registrations are open to restoration volunteers from around the region and more information can be found at **www.naturespace.org.nz/restorationday2018**

- The department helped fund the Tuna Trails event at Bothamley Park and one staff member also attended. Over 100 students and their families attended **the event, which was aimed at school children and their families and involved activities to engage them with the biodiversity values of the stream.**

- The department sponsored the New Zealand Association for Environmental Education's conference, held in Wellington in April. Over 200 delegates attended and one Biodiversity staff member ran a workshop and contributed to a panel discussion**.**

4.3.4 Strategy and Systems

- An internal process for assessing proposals to translocate animals to/from land that GW owns or manages has been signed off by managers of Biodiversity, Environmental Science and Parks departments.

5. Environment Management

5.1 Harbours

5.1.1 Recreational boating and education

- We completed our final two "No Excuses' days this quarter, the campaign, jointly run with Maritime NZ and the Maritime Police Unit created some good profile for our safety messages with more emphasis on Kapiti and Porirua Harbours. Warnings were given about non-carriage of lifejackets and lack of communications.

- We have carried out a review of our Marine Transport Operators Plan, partially triggered by extending the operational area of our patrol boat *Amotai* to give us a better presence in the Porirua and Kapiti areas for compliance activities in the future.

- This time of year sees the conclusion of most of the harbour events, there were 86 separate events that were coordinated and safety procedures checked for this summer season.

5.1.2 Navigation aids

- Our navigation aids and signal station were assessed as part of their five yearly revaluation process.

- Maintenance was carried out on the piling for the supporting structure at the Rear Lead light.

5.1.3 Safety and exercises

- In March the Harbourmaster went to Whangarei as part of a Safety Management System review panel along with staff from Ports of Auckland and Maritime NZ. The panel found the many entities involved in making the harbour function work well together under the guidance of the Port and Harbour Marine Safety code. Wellington will have a similar review early in 2019.

The review panel on board the cement carrier "Aotearoa Chief" at the cement factory wharf in Whangarei Harbour

- The Harbourmaster has been involved in review groups for both Port & Harbour Safety Code review process and a fact finding discussion for the Search & Rescue Council on preparedness and prevention work.

- The Harbourmaster took part in a Mass Rescue exercise organised by Police and NZ Search & Rescue. This was a scenario involving a cruise ship within Wellington's coastal waters and highlighted some of the potential issues of large numbers of passengers being evacuated at sea.

- We ceased having the security guard on the Mana boat launching area in mid-April. Over summer they helped to keep swimmers and boats apart but this area continues to be a problem until such time that a solution can be found to separate the activities. Part way through this summer we trialled using removable stakes and tape to mark the launching area which did help. This season patrolling this area has cost over $15,000. We have submitted on PCC's LTP for consideration to separating these incompatible activities.

- Harbour Ranger John Tattersall spent two days in Auckland as part of a large Maritime NZ led oil spill response exercise. John is a member of the National Response Team (NRT), a 120 strong group of multi-skilled spill responders that can assist in any part of the country as required.

A current buster spill response boom being towed behind a dedicated oil spill response vessel, one of four stationed around the country

- We will shortly review our past summer compliance and education activities. We will report to Maritime NZ regarding activities they funded and prepare an application for next summer's funding.

- A meeting was held between our office and the Marine mangers for the two ferry companies, in line with the Port & Harbour Marine Safety Code, to discuss safety issues on the harbour. The meeting was positive and informative and we will be holding these regularly throughout the year.

- We are discussing with NIWA the option of a second waverider buoy near the harbour entrance to provide better reliability of swell information for the harbour entrance.

- We were involved in the 50th commemoration of the grounding of the ferry *Wahine*, weather conditions, while not as bad as 50 years ago were not pleasant; however planned activities still took place including a parade of harbour vessel, including Port Company, rescue craft, boats involved in the rescues and other boats available for any future events. Our vessel *SeaCare* assisted in organising the vessel for the procession and took the final place in the parade. One of our Communications Officer's from Beacon Hill was tasked with sounding a former ship's bell for each vessel as it passed.

- In a port first we had a tanker, the *Manchac Sun*, power by methanol visited Wellington on 27 April. Internationally there is a move away from high sulphur fuels and this may become a more common occurrence in the future. This would have very positive implications for reduced risk of pollution from shipping and improved air quality outcomes.

5.2 Environmental Regulation

5.2.1 Regional bore security investigation

At present we are reviewing the information collected for the Kapiti Coast bores. This will determine which bores require a physical inspection by a specialist drilling contractor. The Wairarapa bore investigation is continuing, and we expect this work to be completed in the next three months. Further work within the Waiwhetu aquifer will now focus in on the recommendations contained in GWRC commissioned Stage 1 Waiwhetu Aquifer Contamination Report.

5.2.2 Havelock North Inquiry response – Regional Water Supply forum

GWRC, Wellington Water Ltd (WWL), Regional Public Health and Territorial Authorities across the region are currently in the process of formalising our respective roles and working arrangements with regard to drinking water protection via an MOU. To aid this, RPH, WWL and GWRC have engaged a project manager to oversee the completion of the MOU before the end of the financial year.

5.2.3 WIAL Airport runway extension

The Environment Court has granted the request by WIAL to defer proceedings of the airport runway extension application until the end of October. WIAL is required to report to the Court on the progress of their application with the Director General of Civil Aviation.

If the matter proceeds to hearing after 31 October, The Court will order the consent authorities to give public notice that any person who has not yet joined the proceedings but who wishes to; may file a notice with the Environment Court to become a party to the proceeding.

The Environment Court will convene a further judicial conference at a date after 31 October in order to review progress of the application and make further directions to progress the proceedings to hearing.

5.2.4 T and T Landfill/ Owhiro Stream community initiative

On 13 April, an orange discharge to the Owhiro Stream was reported to GWRC's Environment Hotline. Our duty officer's initial inspection found that the discharge was coming from the T and T Landfill. This was a short duration discharge, but still left a visible orange layer on the bed of the stream. We are investigating what may have happened onsite, or if there was a failure of the storm-water diversion system. This discharge was disappointing for all, especially as we head into a 'community day' on Saturday 5 May, at the Owhiro Bay School. The community day brings together members of the Owhiro catchment community, along with GWRC, WWL, Wellington City Council and T and T Landfill to talk about the current state of Owhiro Stream. The forum will look at develop an improved shared understanding of current problems and the roles all parties might play in fixing these.

5.2.5 Western wastewater pipeline – notified consent

WWL have applied to remove a condition on a consent they currently hold for the western WWTP at Karori. The condition requires the pipeline from the plant to the south coast to be replaced in 2023. WWL consider the pipeline still has an operational life out to 2035. Given this matter was the subject of an appeal and Environment Court ruling in 2006, WWL requested public

notification. We received three submissions; two neutral and one in opposition. A hearing will be held on 4 May 2018 to determine this application.

5.2.6 Featherston Wastewater Treatment Plant re-consenting

Following further discussion and the provision of an interim report regarding effects on aquatic ecology, SWDC has formally requested that the application be publicly notified. We are expecting the notification to occur in early May with a Hearing set to follow, probably in late September.

5.2.7 Masterton Lakes

Masterton District Council's applications for water takes for their two town lakes (Henley and Queen Elizabeth Park) are currently on hold while further discussion takes place. The main point of discussion is around the tricky issue that both applications seek to take water from the adjacent river during times of low flow which is presently contrary to the proposed direction of the Proposed Natural Resources Plan.

5.2.8 Roads of National Significance (RoNS) Projects

(a) Transmission Gully (TG) and Porirua Link Roads (PLRs)

Transmission Gully*:* With the onset of more unsettled weather and a significant area of open earthworks, there was an increased focus later in the reporting period on site preparedness for winter and wet weather events. The Earthworks Compliance Reference Group met in February to review earthworks performance and a further meeting was set for early April to review progress on required actions. The site erosion and sediment control systems are audited weekly. Other key pieces of work undertaken during the reporting period include review of a revision to part of the Ecological Monitoring and Management Plan (EMMP), processing of changes to SSEMPs and ongoing work associated with clarifying NZTA proposals and obligations around mitigation protection.

Porirua Link Roads: As with TG, there has been an increased focus on preparedness of the Porirua Link Roads for wet weather conditions. Consent applications and SSEMP changes continued to be processed and weekly auditing of erosion and sediment control systems is ongoing.

(b) Peka Peka to Ōtaki

Enabling works continued in specific locations. A limited number of SSEMPs have been lodged for review and certification.

5.2.9 Significant Investigations and Enforcement

There are ongoing investigations instigated during this period but no significant investigations have been closed. We have one live case before the courts, a prosecution for works in the bed of a river. This is still waiting to proceed to trial.

5.3 Environmental Science

5.3.1 Our Land 2018

The recently released Our Land 2018 report provides information about the state of New Zealand's land, the pressures on this state, and what it means for

us and the environment. Our Senior Terrestrial Ecologist has been on the Technical Advisory Group, providing expert input for the report. Key findings include:

- A 10% increase in the amount of land covered by towns and cities. The Urban Growth Agenda aims to set a new direction for urban development and consideration of versatile land (e.g. best soils to grow a range of crops).
- A rapid increase in intensification of agriculture has increased phosphorous levels in soils. High phosphorus levels can affect productivity while land run-off and erosion increases the amount of phosphorous entering our waterways. Farmers use this information, as well as science and advice, to improve their soil management.
- Half of land erosion, approximately four-hundred-thousand dump trucks of soil unloaded weekly for a year, is from pasture. The good news is that many farmers now have 'farm plans' in place to help them farm more sustainably.
- There is continued worsening of the threat status of species - nearly 83% of land vertebrates (bats, birds, frogs and reptiles) were classified as being "Threatened" or "At Risk" of extinction
- Continued loss of land cover with almost two-thirds, particularly rare and naturally uncommon ecosystems, now "Threatened" with extinction.
- First time reporting of contaminated land, with GW's effort at maintaining the Specific Land Use Register (SLUR) recognised specifically.

5.3.2 Recreational Water Quality

5.3.3 With summer now over, so too is our weekly summer monitoring programme that finished end of March. Fortnightly winter sampling continues at 11 coastal beach sites until December. Swimming water quality at popular river and coastal sites is generally poor following moderate to heavy rain events. Of particular concern is:

- Poor water quality during dry weather (not related to rain) at several sites in Porirua Harbour and coastal areas.
- Poor water quality at the popular Plimmerton Beach site at South Road prompted public warning sites and a closer look for the source of contamination in the catchment, the results are yet to be finalised.
- Poor water quality continues to occur at the heavily used waka ama launch site at Wi Neera Drive
- Seven exceedances were reported for this site this season, six of which occurred during dry weather

Theses 'dry weather' exceedances raise concerns that wastewater is contributing to poor bathing water quality, the extent of which is underestimated by the weekly surveillance sampling.

5.3.4 Farming for the Future (F4F)

The 5th Farming for the Future 2018 seminar was held in Carterton, 10th April. It helps farmers, businesses and organisations improve their knowledge and understanding of the natural environment, reduce their environmental footprint and achieve more sustainable outcomes. This year, GW's climate scientist Alex Pezza presented: 'Our changing climate, what can we expect, what can we do?' Alex's talk helped participants realise what affect climate change (especially drier summers/wetter winters, more extremes) will have on their businesses going forward.

Recooper8 reviewed this event on Arrow FM.

5.3.5 Urban Stream Biodiversity Monitoring

The Urban Stream Biodiversity Monitoring programme, funded by Wellington City Council, has completed its second year of monitoring. GW's Marine and Freshwater team have surveyed selected urban streams in Wellington city looking for native fish and invertebrate populations. Information gained from this work will be used to develop an urban stream biodiversity monitoring network that can help to inform management strategies and adaptive management techniques to protect those sites with significant biodiversity values. Amongst those streams surveyed were the Owhiro, Kaiwharawhara, Ngauranga, Karori, and Moturoa streams. Eels were commonly found along with banded Kokopo which reinforces the value of these streams for native fish habitat. The most exciting find was a native koaro in Moturoa Stream in Central Park; this little fish is a great climber and would have made its way from the harbour via a network of pipes to this site in the park. What a little battler!

Left: Shyam Morar spotlighting for native fish in Owhiro Stream, and right: the native koaro

5.3.6 Rain gauge Network

New rain gauges have been installed at the GW deport in Mabey Road and Regent Street, Petone. These make up the latest additions to the monitoring network that our hydrology team is implementing and maintaining for Wellington Water (WWL). This network is used by WWL to better manage

their storm water networks in real-time and to gain a better understanding of the distribution of the rainfall across the four cities. WWL recognise that our hydrology team is the best placed for providing this service.

5.3.7 Promapp mapping system

The hydrology team are key players in the initial rollout of the process mapping system Promapp to GW. Promapp is a system that allows us to better manage and maintain the documentation that supports the methods, techniques and processes we use to do our work. It is an extremely useful tool for ensuring consistency across our organisation. Initial expert user training has been completed and the team is currently in the process of identifying and prioritising a work programme for implementing the system.

5.3.8 Citizen Science

Citizen Science at GW continues to grow, with many highlights over the last month. Two standouts were:

- The Citizen Science Symposium held at Te Papa 7 – 9 April was very popular. Speakers included not only those from New Zealand working in Citizen Science but also those from the Smithsonian Institute, the European Citizen Science Association (Germany) and the University of Nebraska. A freshwater monitoring session at Otari Wiltons bush, focussing on the Stream Health Assessment and Monitoring Kit (SHAMK), was well attended. Participants enjoyed the opportunity to meet likeminded community members, noting that in-person training was essential.

HECUA interns (left) and Citizen Science Symposium participants at Otari Wilton bush SHMAK training day.

Our HECUA interns designed a short survey and wrote a report about the day providing feedback to NIWA in regards to how the SHMAK kit and manual could be made more user-friendly.

- Friends of the Waiwhetu Stream are proving to be very capable citizen scientists. During their initial training in February they identified and sized short-fin and long-fin eels, an abundance of inanga, common bully and giant kokopu. They did their 3-monthly macroinvertebrate survey last Saturday (21 April), recording and analysing the data themselves. And they were delighted to find a freshwater koura!

Left to right: Friends of Waiwhetu stream get ready to monitor; freshwater koura and giant kokopu

5.3.9 Monitoring on Miramar Peninsula

The second annual rodent monitor for Miramar Peninsula was completed for Predator-free Wellington. Chew cards were put out for three nights during March across the peninsula. Over 20 volunteers were involved in the monitor. Results will be published using a variety of media.

Experts and citizen scientists worked together to complete a baseline bird survey on the peninsula during November last year. Bird counts were made at 84 count stations with observations recently added to the eBird database.

5.3.10 Coastal bird monitoring

Three contractors completed a survey of coastal birds this summer, travelling from the top eastern section of the Wellington region's coastline to Onoke Spit. It is planned to complete the other half of the survey (to the top of the western coast) next summer. This work will provide more accurate regional population estimates for banded, NZ and black-fronted dotterels, red-billed gulls, white-fronted terns, reef heron and variable oystercatchers. This information can feed into conservation planning and resource consenting processes. In addition to the birds encountered, large numbers of fur seals were recorded.

5.4 Environmental Policy

5.4.1 Regional Council input into city and district council planning.

Attachment 1 is a memorandum on Regional Council input into city and district council planning. Two areas of particular interest are highlighted below:

Kiwi Point Quarry Extension Plan Change 83. Wellington City Council have proposed the plan change to allow for the extension of the quarry into quality aggregate areas which are at present principally zoned as open space. The extension is being justified by the limited aggregate resources in Wellington and the demand for those resources by the development and road making pressures on the city and the expense and impact of carting gravel from outside the city or region. The Regional Policy Statement requires that particular regard is given to the social, environmental and economic effects of using mineral resources within the region when assessing the plan change. Our submission will also highlight the need for some further assessment of environmental effects on native biodiversity and the requirement for a thorough management plan to reduce or offset environmental effects on biodiversity and to provide for reestablishment of the area.

Preliminary discussions are underway with the **two Hutt city councils on plan changes for landscape, including special amenity landscapes, natural character and significant indigenous ecosystems and habitats**. GWRC owns extensive areas of land for flood protection purposes, water supply and parks which have been identified with those values. We are raising issues to make sure that our operational requirements are acknowledged and catered for in a way which is consistent with the regional policy direction agreed to in the RPS.

5.4.2 Whaitua programme update

The **Ruamāhanga Whaitua Committee** is fully committed up until the end of May with engagements as they begin to finalise the Whaitua Implementation Programme (WIP). Since February they will have completed and will complete the following:

- Three Community meetings
- One stakeholder meeting and planning one more
- Two hui with mana whenua and planning one more
- One meeting with District Councils and will do one more plus planning to have meeting with Mayors and CE's
- Four meetings and two drop-in sessions with directly affected water users
- Planning 3 more meetings with various primary sector groups including the Federated Farmers AGM and two hill country farmer meetings
- Planning a presentation to Farmers Reference Group.

This brings the total to over 50 engagements. In April, the Whaitua Committee will have met three times for 6 hours in addition to all the meetings outlined above. The WIP will be finalised in May for presentation to Te Upoko Taiao and full council in June.

The **Welllington Harbour and Hutt Valley Whaitua** set-up process is on track for Committee to begin early August. Project plan includes options for reducing the timeframe. This is being discussed with GWRC officers and canvassed with iwi and key stakeholders to ensure co-design and buy-in.

GWRC teams are collating all relevant information to be ready for the Committee when it starts. Iwi and partner organisations also collating information. Committee nominees are being confirmed with partners. Iwi advise they are close to agreement on the Whaitua name.

Communications and engagement starting with Stream Days - Owhiro on 5 May; Wainuiomata and Makara being organised, dates tbc. Wider engagement is to ramp up by the end of May including a social media component.

5.4.3 Proposed natural resources plan hearings

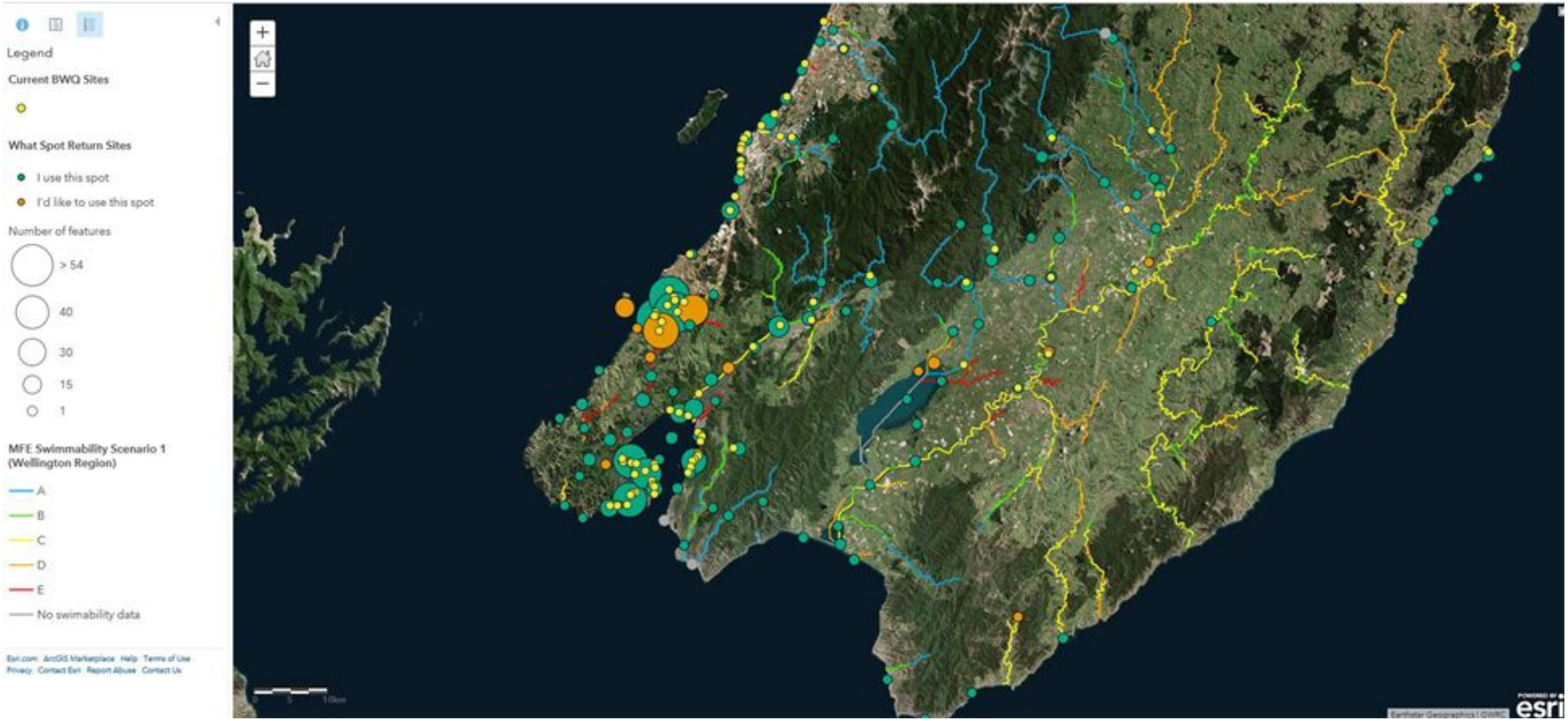
Hearing Stream 4 (Water quality and Storm-water) is largely complete; the substantive hearing commenced on 12 February and adjourned on 7 March, with right of reply hearing set down for 16-18 May. Hearing Stream 5 (Beds of lakes and rivers; Wetlands and biodiversity; Discharges to land) s42A Officer's reports were pre-circulated on 12 March, with the Hearing commencing on 9 April and adjourning 27 April. Right of reply hearing for Hearing Stream 5 is set down for 18 & 19 June.

The key risks arising during Hearing Stream 5 relate to the reclamation of streams associated with urban housing development and also related to the lack of certainty associated with the rules related to wetlands – specifically the identification of wetlands and delineation of boundaries.

Hearing Stream 6 (Coast, Natural hazards, Historic Heritage, Contaminated land and hazardous substances, and Drinking water supply protection areas) s42A officer's reports and RoR reports for Hearing Stream 4 due for pre-circulation on 4 May. Hearing Stream 6 is due to commence on 28 May for three weeks.

5.4.4 What Spot? findings

What Spot? is a tool designed by GWRC's community engagement team to get information on where our community swims and where they would like to swim. Findings from this survey will feed into our response to the 2017 amendments to the NPS-FM. An overview of the findings for the region is shown in the map below (together with the MfE swimmability classifications):


Legend
Current BWQ Sites
What Spot Return Sites
I use this spot
I'd like to use this spot
Number of features
> 54
40
30
15
1
MFE Swimmability Scenario 1 (Wellington Region)
A
B
C
D
E
No swimability data
esri

5.4.5 Fourth Order streams in the Wellington Region

Following a discussion of the NPS-FM implementation programme at full Council, Councillors requested information regarding the fourth order rivers and streams as used by MfE in the swimming maps in the Wellington region. These are provided below:

Fourth order rivers and streams (source: MfE, pers comm)	
Abbots Creek	Pahaoa River
Ahiaruhe Stream	Paharakeke Stream
Akatarawa River	Pakowhai River
Akatarawa River West	Pakuratahi River
Atiwhakatu Stream	Parkvale Stream
Awhea River	Patanui Stream
Beef Creek	Pauatahanui Stream
Biscuit Stream	Penn Creek
Blairlogie Stream	Porirua Stream
Boar Creek	Punga Stream
Boundary Creek	Rorokoko Stream
Bush Stream	Ruakokoputuna River
Castle River	Ruamahanga River
Dry River	Southern Waiotauru River
Eastern Waiotauru (Snowy) River	Stonestead Creek
Glenfalloch Stream	Tauherenikau River
Horokiri Stream	Tauweru River
Horokiwi Stream	Te Mangarangi Huareka Stream
Huangarua River	Tinui River
Hutt River	Turanganui River
Kaikaikuri Stream	Turanganui River East Branch
Kaiwharawhara Stream	Upokongaruru Stream
Kaiwhata River	Waikanae River
Karori Stream	Waikaraka Stream
Kaumingi Stream	Waingawa River
Kellys Stream	Waingongoro Stream
Kiriwhakapapa Stream	Wainui Stream
Kopuaranga River	Wainuiomapu Stream
Kourarau Stream	Wainuiomata River
Kuamahanga Stream	Wainuioru Stream
Makahaka Stream	Waiohine River
Makahakaha Stream	Waiotauru River
Makara Stream	Waipapa Stream
Makirikiri Stream	Waipawa Stream
Makirikiri Stream North Branch	Waipoua River
Makoura Stream	Waitawatautau Stream
Mangahuia Stream	Waitewaewae River
Mangaone Stream	Waitohu Stream
Mangapakeha Stream	Waiwhetu Stream
Mangapokia Stream	Wakamoekau Creek
Mangapurupuru Stream	West Waitewaewae River
Mangareia Stream	Western Hutt River

Mangaroa River	Whakapuni Stream
Mangatarere Stream	Whakatahine River
Mangatoi Creek	Whakataki River
Mataikona River	Whakatikei River
Maungakotukutuku Stream	Whangaehu River
Motuwaireka Stream	Whangaehu Stream
Mukamuka Stream	Whangaimoana Stream
Ngarara Stream	Whareama River
Ngatiawa River	Whareroa Stream
Ohariu Stream	Whatiuru Creek
Opouawe River	
Orongorongo River	
Otakaha Stream	
Otaki River	
Otauira Stream	
Oterei River	
Otukura Stream	
Oumukura Stream	

5.5 Parks

(a) Parks network

Recent months saw the final instalment of the "Inspiring Parks Inspiring People" social media/ outdoor campaign developed in conjunction with the Customer Engagement team. Focussing on the story of volunteering through the Riding for Disabled Association, this was much appreciated by our RDA partners and has generated comment among other volunteer groups associated with the regional parks.

(b) Million Metres programme

Continuing the theme of developing partnerships Parks is working with the convenors of the Million Metres programme (run by Sustainable Business Network) and other GWRC teams to develop and sign a Memorandum of Understanding. This will be a base to help fund individual riparian restoration projects across the region, including opportunities on private land. Million Metres is a crowdfunding web-based service which works in a three-way partnership with a landowner(s) or community group (Project Holder) and an organisation with experience in planning and delivery of riparian restoration (a Field Partner e.g. GWRC) on specific projects.

(c) Park camping

The long warm summer has seen high visitor numbers and camping far in excess of targets. With its high proportions of international visitors, Dry Creek is now surpassing Battle Hill in terms of patronage. Interestingly, campers often park at Manor Park station car park during the day, use the trains to visit Wellington and stay another night before heading away.

(d) Greater Wellington Great Outdoors summer programme

The Greater Wellington Great Outdoors (GWGO) summer programme saw around 13,000 participants at the various events; 45% were new visitors to the relevant parks and almost all event participants plan to visit the park again. Feedback remains positive about the event organisation, how much participants enjoy engaging with park rangers and guides who are friendly and knowledgeable, and the opportunity that GWGO presents to get out and explore the region. 40% of people heard about GWGO through Facebook with 'word of mouth' being the main information source for 30%.

5.6 Park projects

5.6.1 Pakuratahi Forest

Contractors have replaced a failing 21m long culvert on Station Drive in the Pakuratahi Forest with a fit for purpose durable plastic alternative. A key access route for park management and contractors and plantation forestry trucks, this culvert is located slightly upstream of the historic railway bridge.

Several heritage structures on the Rimutaka Rail Trail received special maintenance attention in accordance with an ongoing archaeological authority. Vegetation is being cut and sprayed and the stone and wooden structures are being treated to control lichen, moss and mould.

5.6.2 East Harbour Regional Park

Following an extended approvals process we have now finalised the design for the Baring Head vehicle bridge replacement and consents have been granted. The tender process has just begun. However, these delays have meant that construction will not now begin until the new financial year.

The walking track formation from Muritai Park to Main Ridge in East Harbour Regional Park is now complete and it will open shortly after the track surface is metalled in early May. The name "Karearea Track" has been suggested to the

Eastbourne Community Board, and has been well received. We are working with the community board and our wider GWRC team on interpretive signage, to be developed over the next few months and officially unveiled in spring.

In late April GW and Friends of Baring Head hosted four Upper Hutt City Councillors and senior Hutt City Council staff (including the CEO) at Baring Head to update them on progress to date and the plans for redevelopment of the Lighthouse Complex. Friends of Baring Head were successful last month in securing $150,000 from Wellington Community Trust for the Lighthouse Project!

5.6.3 Queen Elizabeth Park

The new electronic gate at Paekakariki (Wellington Road entrance to Queen Elizabeth Park) is now fully functional. Two more automatic gates will be installed at park entrances before the end of the financial year, at Dry Creek (Belmont Regional Park) and Tunnel Gully (Pakuratahi Forest). Opening and closing at more predictable times, these gates help improve park security, make better use of staff time and save on ongoing security company costs.

Over time we have seen the effects of intense weather events on the coastline at QEP, and the significant erosion of the dunes. This has recently culminated in the closure of sections of the Coastal Track near Raumati South and removal of a pedestrian bridge over the Wainui Stream near Paekakariki. We recently consulted with Community Boards at both ends of QEP and have commenced a landscape redesign exercise for QEP's Paekakariki coastal zone to plan for managed retreat of park infrastructure.

Engineering surveyors have produced draft plans for the QEP Mackays Crossing entranceway and car park areas. These were submitted to NZTA for safety review to ensure compliance where the park exit re-enters the road corridor. The project is shortly to be tendered for construction.

The remaining sediment control works have been completed in the North Whareroa waterway at Queen Elizabeth Park. The consented works have been funded by NZTA to help manage downstream effects of diverting additional water directly into the park as a result of the M2PP expressway. The works were monitored by an ecologist and Iwi monitors. The photos below show works in progress, some of the eels salvaged through the works and the waterway after 130mm of rain fell in 24 hours.

5.6.4 Belmont Regional Park

Following extensive planning in conjunction with a specialist designer, Parks has commissioned construction of a bike skills area at Stratton Street in Belmont Regional Park. Almost complete, this is already attracting riders. This is one of the key projects funded by the sale of land for Transmission Gully and complements the downhill track network which BAMBA continues to develop in the former pine forest area.

The historic munitions bunkers at Belmont have been inspected by our construction team. A subset of 11 bunkers was tagged for further inspection by structural engineers in order to address specific structural issues. Field inspections are complete and a report is expected in the next quarter.

5.6.5 Battle Hill

Stage one earthworks have been completed on the RDA arena site at Battle Hill Farm Forest Park. Construction on the building will get underway on 15 May with completion scheduled for late October 2018. Once completed, landscaping of the area will commence.

Preparation works for the Maclean Trust project continue with 21 hectares of gorse aerially sprayed in two operations carried out in late January and early March 2018. Approximately 4 hectares will be planted over the 2018 winter. In conjunction with hydrology staff from the Environmental Science team a series of piezometers will be installed to gain a better understanding of the relationship between the various groundwater layers, the stream and weather events. This will help guide the restoration project in determining the best mix of species to be planted at locations within the project site.

5.6.6 Akatarawa Forest

Replacement of a failing double culvert located on the Causeway by the Whakatikei Wetland in Akatarawa Forest has seen access restored for a very important forestry road.

Cannonpoint Walkway, Akatarawa Forest – in April GW Parks staff and Upper Hutt City Council Planners meet with the current and future landowners of Cannonpoint property to discuss the proposed subdivision development and public access via the walkway. The parties present all expressed a willingness to work towards an outcome that will see public walking and cycling access through the property retained permanently.

6. Climate Change

6.1 Wellington Region Climate Change Working Group

The Working Group met on 4 December 2017 and 16 March 2018. The next meeting is scheduled for 5 June in Carterton. All nine councils have confirmed they have accepted the terms of reference. Ara Tahi has also put forward their three nominees for the Working Group. The Group heard from representatives of a joint project by Bay of Plenty Regional Council and Napier and Hasting councils to develop a long term management strategy for coastal erosion and inundation resulting from sea level rise. The community-led approach they used is being considered further by the Natural Hazards Management Strategy group.

The Working Group also heard from Tom Pettit of Wellington City Council regarding their resilience strategy, and the Ministry for the Environment about their new sea level rise guidance. This guidance does not adopt one value for sea level rise but has four approaches for four different categories of development in the coastal zone. For intensification, adaptive planning is recommended. For subdivision and new long-lived infrastructure, values of sea level rise over 100 years out and in the highest emissions scenario is recommended (a rise of over 1.3m).

The Low Carbon Transition group, an officer group focussed on mitigation has formed and will report back on its initial plans at the 5 June meeting.

6.2 External reports

PCE report on Zero Carbon Act

A report by the new Parliamentary Commissioner for the Environment, Simon Upton, titled 'A Zero Carbon Act for New Zealand' was published on 7 March. The report contains detailed advice to Parliament on plans for a UK-style Zero Carbon Act and independent Climate Commission. It follows on from the Stepping Stones to Paris and Beyond report released by Mr Upton's predecessor, Dr Jan Wright, in July last year.

The Commissioner has made nine recommendations on what he sees as some of the more critical elements in the formation of the Zero Carbon Act legislation and the ensuing Climate Commission. This includes setting effective carbon budgets, establishing a credible Commission, and ensuring that words are turned into deeds. It also underlines the importance of addressing climate adaptation. His view is that the commission should not have any direct responsibility for policy settings, e.g. not be able to affect the price of carbon in similar fashion to the way the Reserve Bank influences interest rates.

Productivity Commission Low Carbon Report

On the 27th of April, the Productivity Commission published its draft report on transitioning to New Zealand to a low-emissions economy (namely getting on track to be net-zero emissions by 2050). They are taking comments and feedback until 8 June.

The Commission recommends a strategy for New Zealand that involves replacing fossil-fuels, where feasible, with clean electricity (e.g. electric vehicles and lower grade process heat) together with substantial land use change, in favour of large scale new forestry plantation and significant growth in horticulture. Longer term, as new technologies emerge in response to higher emissions costs, there will be more options available to ease the path to a net-zero emissions future. These new options will be particularly important since, while increased forestry buys us time, it is not a permanent solution for New Zealand. Policy recommendations include:

- A strong signal from the Government, and preferably from across the Parliament, about its long-term commitment to transitioning to a low-emissions economy;
- A broad-based and effective emissions pricing scheme that includes phasing in agriculture – it also sees carbon prices needing to rise by up to 10 times their current level.
- Supporting regulation and policies, such as a "feebate" scheme for imported vehicles that would make low emissions vehicles cheaper and high emissions ones more expensive, plus minimum standards to prevent NZ becoming a dumping ground for unwanted vehicles.
- Making carbon emissions a central consideration of transport planning.

- More resources focused on low-emissions research and development, especially for agriculture; and
- Mandatory financial disclosures about climate risk.

PCE report: http://www.pce.parliament.nz/publications/a-zero-carbon-act-for-new-zealand-revisiting-stepping-stones-to-paris-and-beyond

Productivity Commission report: https://www.productivity.govt.nz/inquiry-content/3254?stage=3

7. The decision-making process and significance

No decision is being sought in this report.

8. Engagement

Engagement on this matter is not necessary.

9. Recommendations

That the Committee:

1. ***Receives** the report.*
2. ***Notes** the content of the report.*

Report approved by:	Report approved by:	Report approved by:
Nigel Corry General Manager, Environment Management	**Tim Porteous** Acting General Manager, Catchment Management	**Luke Troy** General Manager, Strategy

Attachment 1: Regional Council input into city and district council planning

Attachment 1 to Report 18.148

greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

MEMO

TO All Councillors

FROM Lucy Harper, Team Leader Environmental Policy

DATE 27 April 2018

DOCUMENT REF ENVPOL1-5-72

Regional Council input into city and district council planning

1. Purpose

To inform Councillors of Greater Wellington Regional Council's input into the statutory resource management processes of territorial authorities in the region for the period from 10 March 2018 to 27 April 2018.

GWRC's interest arises from the Council's responsibilities for regional planning and the integrated management of natural and physical resources in the Wellington Region.

2. City and District Council plan changes and resource consents

Territorial Authority	Status of Document	Name of Document	Main topics commented on	Action
Wellington City Council	Proposed plan change	Proposed District Plan Change 83 – Kiwi Point Quarry	Effects of proposed quarry extension for gravel extraction activities on biodiversity	Assessing the need for submission.
Hutt City Council	Pre-draft plan change consultation	GWRC as land owner letters	Landscape, natural character and biodiversity	Identifying issues for GWRC operations and providing input to draft provisions.
Upper Hutt City Council	Pre-draft plan change consultation	GWRC as land owner letters	Landscape – biodiversity to follow	Identifying issues for GWRC operations and providing input to draft provisions.

Territorial Authority	Status of Document	Name of Document	Main topics commented on	Action
Upper Hutt City Council	Proposed plan change	Proposed plan change 42 Mangaroa and Pinehaven Flood Hazard Extents	Flood hazard and policy provisions	Public notice of decision 11 April. Appeal period closes 24 May. No appeal needed from GWRC.
Porirua City Council	Preparation for Draft District Plan	District Plan Review	Alignment with policy and operational matters	Discussion occurring on greenfield and infill development areas, infrastructure, hazardous facilities.
Kapiti Coast District Council	Decision version	Proposed District Plan Decisions version 2017	Joined as S274 party to appeals on matters in submission	Mediation on appeals commencing 1 May- extractive industries, biodiversity and rural provisions.
South Wairarapa District Council	Proposed plan change	Proposed Plan Change No.9: Greytown Development Area Structure Plan	Alignment with policy and operational matters, particularly stormwater management and flood hazard provisions	Officers report (S42A) recommended changes as in the submission. Attended hearing in support and to clarify flood protection model changes.