

Recreational Use of Coast, Rivers and Lakes in Taranaki

State of the Environment Monitoring Report
2019-2020

Technical Report 2021-46



Taranaki Regional Council
Private Bag 713
Stratford

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Executive summary

The Taranaki Regional Council is required under the Resource Management Act 1991 to recognise and provide for the maintenance and enhancement of public access to and along the region's rivers, lakes and coast. In addition, the council must have particular regard for the maintenance and enhancement of the region's amenity values, including recreational attributes. To this effect, the Council periodically undertakes public surveys to look at the use and access of the region's water recreational resources. This report presents the findings of the Council's third such survey, completed over the period April 2019 to March 2020.

While modernised, the methods used in the current recreational use and access survey are modelled on those used in both the 1980-1982 and 2007 versions of the survey. This allows the results of the three surveys to be compared and insights gained into how recreational habits and access have evolved over the last three decades.

The current survey was undertaken in two parts. Firstly, a web-based questionnaire was conducted to gather information and views from the public on the level of use and access to Taranaki's recreational waters. Secondly, to validate and supplement the results of the questionnaire, physical counts of users were undertaken at recreational sites around the region throughout the summer of 2019-2020.

As in the 1980-1982 and 2007 surveys, recreational sites central to New Plymouth were found to be the most frequented sites regionally. Fitzroy Beach and the Coastal Walkway were found to be the most popular recreational sites across both aspects of the survey, while Pukekura Park, Ōakura Beach, Back Beach, Ngāmotu Beach and East Beach also proved highly popular. Tongaporutu proved highly popular in the observational count survey, but not with questionnaire respondents, likely due to a large fraction of its users being out-of-region tourists.

In general, beach sites were found to be more popular than either river or lake sites for recreation. Corbett Park, at the mouth of the Ōakura, and Merrilands Domain, on the Waiwhakaiho, were the two most popular river sites across the survey. Meanwhile, lake sites such as Lake Rotokare, Rotorangi and Ratapiko remain popular for particular activities, including boating, jet skiing and camping.

Access to water recreational sites across the region was deemed to be relatively good, with 87% of questionnaire respondents saying they had been able to access the sites they wanted, and 85% rating overall levels of access as being good or excellent. The main factor determining which sites people frequented was the distance of the site from home, a result which is reflected in the spatial distribution of the most popular sites in the region. Of the survey respondents, 56% indicated that they do not visit beaches, rivers and lakes as often as they would like, with the primary reason for this being time constraints due to work and family commitments.

A comparison of the results from the 2007 and current survey show the decline in people's perception of recreational water quality in Taranaki, with 51% and 41% of questionnaire respondents in the current survey deeming lake and river water quality, respectively, to only be fair or poor. Despite this result, only a third of respondents checked on recreational water quality state prior to visiting sites. These results suggest that the Council needs to put increased focus on improving recreational water quality regionally, as well as improving the communication and publicising of recreational water quality results for the public's use.

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1 Introduction

New Zealand is known as a water-loving nation, with many outdoor recreational activities being based on and around water bodies such as rivers, beaches, estuaries or lakes. Taranaki local coastal areas, rivers and lakes are viewed as an integral part of the region's natural landscape, and are used by the community for a variety of recreational activities. In Taranaki, as with the rest of the nation, recreational access and use of waterways occurs alongside, and sometimes in competition with, other uses of this resource to meet agriculture, industry, water-supply and power generation needs.

The Taranaki Regional Council (the Council) periodically undertakes a public survey of water recreational access and use in order to understand the public's perception and use of the region's water-based recreational resources. An initial survey was undertaken in 1980-82 (TCC, 1984), with a second survey completed in 2007 (TRC, 2008). The initial 1980-82 survey helped inform and establish the majority of the long-term monitoring sites in the Council's recreational water quality monitoring programme.

This report presents the findings of the Council's third such survey, conducted between April 2019 and March 2020. The maintenance and enhancement of public access to and along the region's water-based recreational areas is a matter of importance that must be recognised and provided for under the Resource Management Act 1991 (RMA). The purpose of the survey is to provide an up to date overview of use and access of Taranaki's coastal areas, lakes and rivers for state of environment (SoE) reporting.

The 2019-2020 recreational use survey consisted of two parts;

1. A public survey, carried out via online questionnaire in April 2019, and;
2. An observational counts of users, undertaken at recreational sites around the region over the summer of 2019-2020.

The results presented in this report give a current indication of the state of, and pressures on, the region's recreational water resources, while documenting factors which influence where and how people use the region's coast, rivers and lakes.

2 Background

2.1 Resource Management Act 1991

The Council is required to promote the sustainable management of natural and physical resources, including water, as stipulated in the *Resource Management Act 1991* (RMA). In promoting sustainable management, the Council is required to recognise and provide for the maintenance and enhancement of public spaces with regards to coastal marine areas, lakes and rivers. This is seen as a matter of national importance under Section 6(d) of the RMA 1991. In particular, regard is to be given to the maintenance and enhancement of the quality of the environment, and of amenity values. The recreational attributes of an area are one such amenity value.

In addition, Section 35 of the RMA requires local authorities to monitor, among other things, the state of the environment of their region or district, to the extent that is appropriate to enable them to effectively carry out their functions under the Act.

To this effect, the Council has established a state of the environment (SoE) monitoring programme for the region. This programme is outlined in the Council's 'State of the Environment Monitoring Procedures Document', which was prepared in 1997. The monitoring programme is based on the significant resource management issues that were identified in the *Council's Regional Policy Statement for Taranaki (1994)*, and as such, enables the Council to determine if its policies and programmes are achieving success.

The SOE programme is made up of a number of individual monitoring activities, many of which are undertaken, managed and reported on an annual basis (from 1 July to 30 June). A 5-yearly overall state of environment report combines and summarises the state and progress of all the individual SOE programmes.

The water recreational access and use survey helps inform whether the Council is meeting the above requirements as set out under the RMA. The survey forms a part of the Council's SOE programme, with the results of the current report to be included in the next five-yearly state of environment report, due to be published in late 2022.

2.2 Regional Policy Statement for Taranaki 2010

The Regional Policy Statement for Taranaki, 2010 (RPS) highlights two significant issues relating to public access along rivers, lakes and along the coastal environments:

1. Providing for the maintenance and enhancement of public access to and along rivers, lakes and the coastal environment, and;
2. Avoiding, remedying or mitigating adverse effects that may arise from public access to and along rivers, lakes and the coastal environment.

The RPS specifically outlines the need to maintain and enhance public access along our river, lakes and coastal environment, as well as policy pertaining to maintaining and enhancing regional amenity values. The relevant policies include:

- Policy 6.7 Maintaining and enhancing public access to and along rivers and lakes
- Policy 8.3 Maintaining and enhancing public access to and along the coastal environment
- Policy 10.3 Maintaining and enhancing amenity values

The RPS provides a list of implementation and action plans, as well as the expected outcome when these action plans are achieved.

The water recreational access and use survey has been designed to help inform the Council and its communities on the effectiveness of these policies. It is worth noting that maintaining and enhancing amenity values are collectively the responsibility of the three local territorial authorities (New Plymouth, Stratford and South Taranaki District Councils), through their land use responsibilities. However, the Council works together with the territorial authorities to promote and enhance access to water recreation resources.

2.3 Recreational water quality monitoring

The Council has been monitoring and reporting on recreational bathing water quality since 1995. As a part of SOE, the recreational water quality monitoring programme has been designed both as a tool for informing the general public about the state of the water quality at recreational sites in the region, and in order to detect and analyse trends in recreational water quality.

Historically, the programme has involved testing of water quality at 16 freshwater and 11 beach recreational sites carried out on at least 13 occasions between November and March every summer. These data are assessed and reported in accordance with the 2003 Ministry of the Environment and Ministry of Health Microbiological Water Quality guidelines. The programme also includes monitoring of benthic cyanobacteria at nine of the river sites, and monitoring of planktonic cyanobacteria at all four lake sites. The results of the sampling are posted both on the Taranaki Regional Council and Land, Air, Water Aotearoa (LAWA) websites, and through signage at the recreational sites.

The perceived water quality of a waterbody is a contributing factor to people's recreational habits in and around that waterbody. In order to inform the Council of its effectiveness under Policy 10.3 of the 2010 RPS (pertaining to maintaining and enhancing amenity values), questions regarding the public's perception of recreational water quality in the region have been included in the questionnaire section of the recreational access and use survey. The current survey also provides an overview of the most frequented water recreation sites in the region, allowing a review of the representativeness of the sites monitored in the Council's recreational bathing water quality programme.

3 Survey methodology and design

The design of the recreational access and use survey broadly follows the methods used in the previous recreational surveys of 1980-82 and 2007. This ensures a level of consistency between the three surveys, which is needed for comparing results between the three. There are two separate components to the recreational survey; first, a questionnaire on recreational access and use is sent to a region wide study group. Following this, field counts of recreational users are undertaken at the region's popular beach, river and lake sites throughout the summer period. The two components of the survey complement each other, allowing validation of results, and further insights into recreational use habits in the region.

Further details on the methods used for the questionnaire and observation counts are outlined below.

3.1 Public questionnaire

Both the 1980-1982 and 2007 recreational surveys employed postal questionnaires to gather information on people's recreational use habits. In the first survey, addresses were selected at random from the Electoral Roll, whilst in 2007, a total of 500 names, split proportionally between the three districts, were selected at random from the white pages. An under-representation of under 20 year-olds was accounted for by collecting an additional 98 questionnaire responses through the region's high schools (TRC, 2008).

Following the 2007 survey, it was recommended that a web-based questionnaire and revised method for selecting the sample population should be considered for future surveys. The method of questionnaire distribution was thus reviewed prior to the 2019 survey, with a web-based questionnaire ultimately being decided on, as it was deemed more efficient than either postal or in-person surveys.

After looking at various options, Qualtrics was decided on as the most suitable online survey. While the format of the questionnaire was changed from previous surveys, effort was made to retain many of the same survey questions to enable comparisons. The transition to an online survey, while keeping the context of the original questionnaire, formed an interesting challenge, with trial surveys showing that any question requiring too much typing resulted in people abandoning the question. As a result, most questions were formatted with possible results in drop-down menus, with the option to type in a custom answer still available. Respondents could also leave comments or feedback, similar to the previous two surveys. The questionnaire was formatted to be mobile-friendly, as it was anticipated that most of the responses would be conducted this way. The final version of the questionnaire used can be found in Appendix I.

The recreational use questionnaire was promoted in local newspapers, social media, regional and district council websites and in radio interviews to try and maximise the number of questionnaire responses. As an incentive to participate in the questionnaire, respondents were entered in a prize draw to win a weekend's accommodation in TRC's Pukeiti Lodge.

3.2 Observational count

As in the previous two recreational use surveys, observation counts of users were undertaken at sites across the region with the aim of validating the results of the online questionnaire. The methods by which count sites were selected, and by which the counts were undertaken, however, were adapted for the current survey, in an effort to establish a reproducible and unbiased count methodology. Ultimately, a list of 41 'permanent' observational count locations was established, consisting of the 33 'well known' sites used for the 2007 recreational use survey, and an additional 8 sites which increased the geographic spread and recreational diversity of the count locations. These sites can be used in future recreational use surveys to ensure consistency and comparability in results. In addition to the permanent count locations, any sites which were identified from the online questionnaire as being in the top 20 most popular recreational waterbodies in the region were also surveyed. This brought the total number of sites in the 2019

observational count survey to 46. Further details on the full list of sites included in the survey can be found in Section 5.

In previous surveys, the number of observational counts conducted at each site has varied depending on the pre-perceived popularity of the site. As a result, in 2007, the number of counts undertaken at a site varied anywhere between one and 20. To remove any bias introduced by uneven sampling, for the current survey ten rounds of observational counts were planned at each of the 46 sites; five on weekdays and five on weekends, and all conducted during the period December 2019 to April 2020. Due to Covid19 lockdown in the end of March 2020, however, the final rounds did not go ahead, with a total of eight rounds undertaken at most sites. In order to gather more information on recreational use throughout the day, each round consisted of three counts taken at different times throughout the same day: in the morning (0800-1200), afternoon (1200-1600), and evening (1600-2000). For efficiency, the full list of 46 sites was split geographically into seven "runs", with surveyors able to conduct three counts at all sites in a single run in the space of one day. The exception to this was the Tongaporutu site, where counts were undertaken by a local volunteer.

Information gathered during each observational count was collected on a standardised survey sheet, and included the total number of people present at the site; both on the beach/bank, and in the water, and the types of activities that were being undertaken. Metadata such as date, time and weather conditions were also collected, as were additional site specific comments, such as if a large organised event was taking place. This allowed anomalous counts to be accounted for in the overall analysis. For consistency, each count at a site was conducted from the same stationary spot, with surveyors instructed on procedures prior to going in the field.

3.3 Limitations of methods used

While the move to using an online questionnaire for the first stage of the survey is an appropriate move, there are none-the-less some limitations and bias associated with the method.

In particular, using a web-based questionnaire biases the respondent profiles towards those who can easily access the internet, as well as those that are most exposed to the promotion channels used. The prize incentive offered was also more attractive to some demographics than others. It is likely, therefore, that some demographics who either do not have access to, or use social and digital media less, such as lower socio-economic groups and the very young or elderly, are under-represented in the survey results. In the 2007 recreational use survey, such biases were somewhat accounted for through, for example, the distribution of the survey to a number of high schools. Such a step was not taken in the current study.

While using a digital platform for the survey enabled the efficient collection of a large number of responses, there were also some new risks introduced, such as the chance of people completing the survey multiple times, or a bot sending in automated responses. The chances of such results being included in analysis were minimised through the use of Qualtrics' Response Quality functionality. This checked the quality of the data collected, and was used to assess and flag survey responses where:

- The respondent finished the survey abnormally fast
- The respondent took the survey more than once (duplicates data)
- The response contained sensitive data
- The response was deemed a possible bot response (robot/computer generated responses)

It should be noted, that a feature of the Qualtrics™ online survey is that multiple survey responses cannot be submitted using the same internet provider (IP) address. This means that residents of the same address could not reply to the survey using the same device.

Similarly, while measures were taken in the 2019 observational count survey to mitigate and minimise method bias, there were still some notable limitations to the methods employed. One such limitation is that the counts were undertaken from a selected stationary point at each site. While this minimised intra-site variability and bias, it also had the drawback that at some sites a full view of the site was not possible. As a result, the recorded number of users at some sites may well be less than the true total number of users.

There will also be a measure of sampler bias in the results of the observational counts. Prior to the survey, all surveyors underwent training on how counts should be undertaken, however there is a measure of subjectivity to some results, such as where the boundaries of activities are vague, for example what constitutes relaxing versus sunbathing or spectating. To counter this uncertainty, no in-depth analysis has been undertaken on such results. Similarly, uncertainty has been introduced in the results on occasions when sites have been particularly popular and estimates on user numbers have had to be made. To mitigate this, reporting of the observational count results generally focus on the median and variability in the number of users, rather than fine-scale comparisons.

4 Survey results

The recreational use questionnaire was available online for five weeks, during which 685 responses were received. Of these, 42 responses were filtered out during quality control after being identified as duplicate responses, while a further 119 responses were omitted for not being complete. This left 80% of all responses as being valid, with only the results of the 524 fully complete and independent responses included in this report.

4.1 Respondent profile

An aim of any survey is to have a pool of respondents that accurately represent the demographic profile of the full population. In reality, however, this is hard to achieve without having a large and truly randomly selected sample pool. For this study, the demographic profile of questionnaire respondents is compared against Taranaki population data from the 2018 census (Figure 1). With 96.4% of respondents to the online questionnaire being Taranaki residents the comparison of demographic profiles highlights some shortcomings of the online survey method.

While it can be argued that the respondents to the 2019 questionnaire present a more representative sample of ethnicities than in the 2007 survey (Figure 1 and Figure 2), the 2019 survey was less representative of the distribution of gender and age of Taranaki's population. In particular, females and 25-65 year olds were over-represented in the 2019 survey (Figure 3), while both the under 25 and over 65 age groups are severely under-represented. There are two likely contributing factors to this; firstly, the promotion channels and online format used for the questionnaire likely had less impact with younger and older demographics. Secondly, young children make up a significant proportion of the "under 20" category. While this youngest demographic is counted in census results, they are unlikely to contribute to questionnaire results, where their parents would be the primary respondent.

The distribution of respondents from each district shows that New Plymouth residents are over-represented in the 2019 questionnaire results, with South Taranaki, and to a lesser extent Stratford, under-represented. This represents a less balanced response than that received in the 2007 survey. This is an unsurprising result, however, as the method for questionnaire distribution in 2007 involved using white pages directories for the three districts, allowing a distribution of questionnaires that was proportional to district populations.

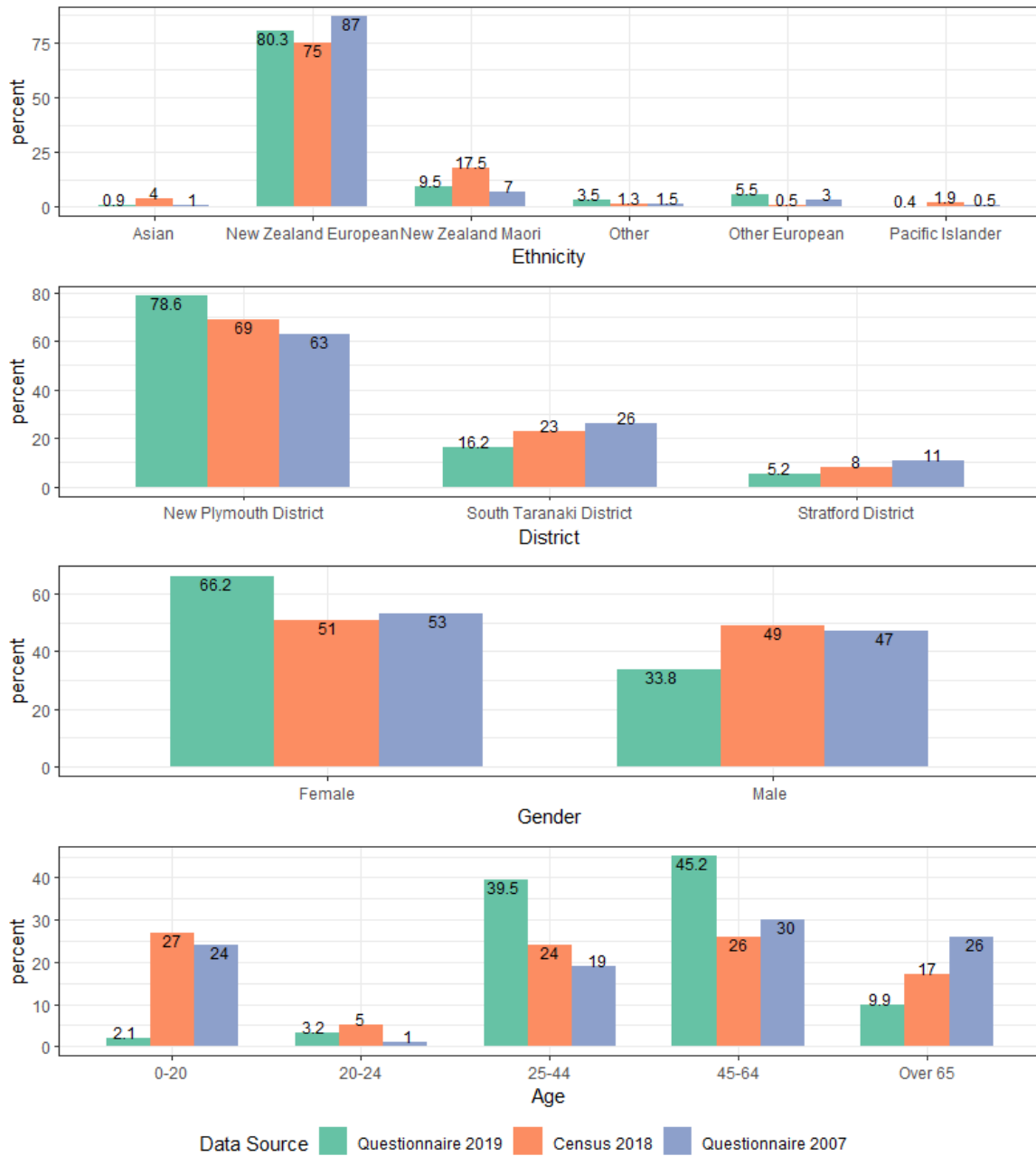


Figure 1 Comparison of respondent demographics between the recreational use questionnaires of 2019 and 2007, and Taranaki census data from 2018

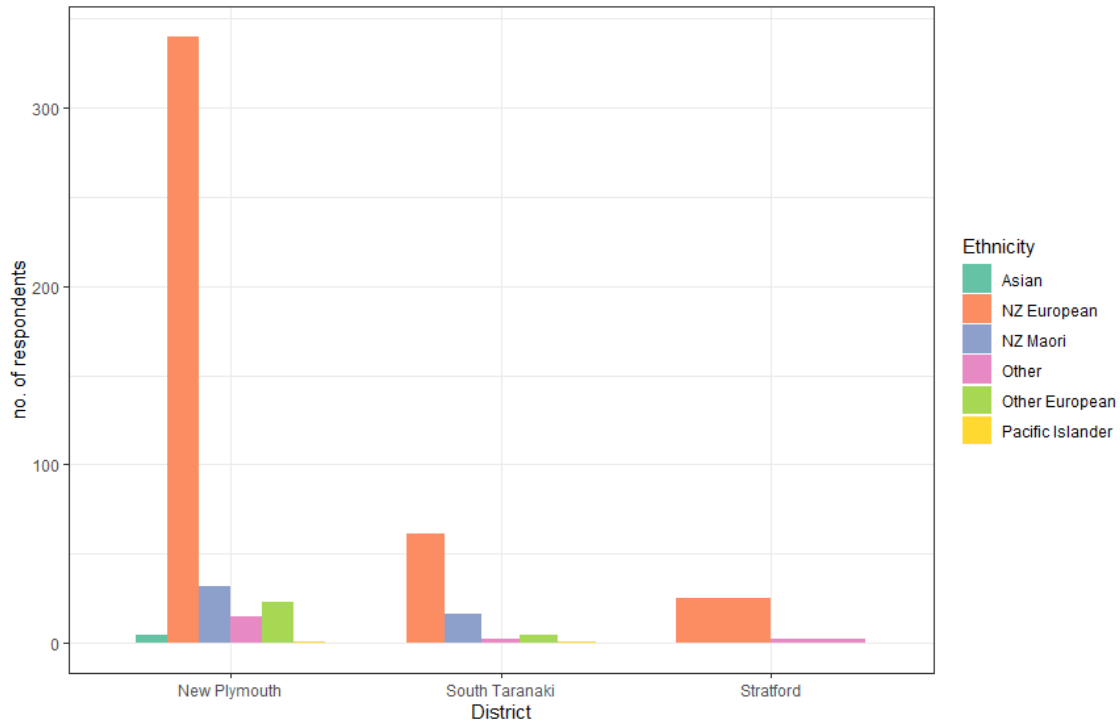


Figure 2 Distribution of respondent ethnicities, by district, for the 2019 questionnaire

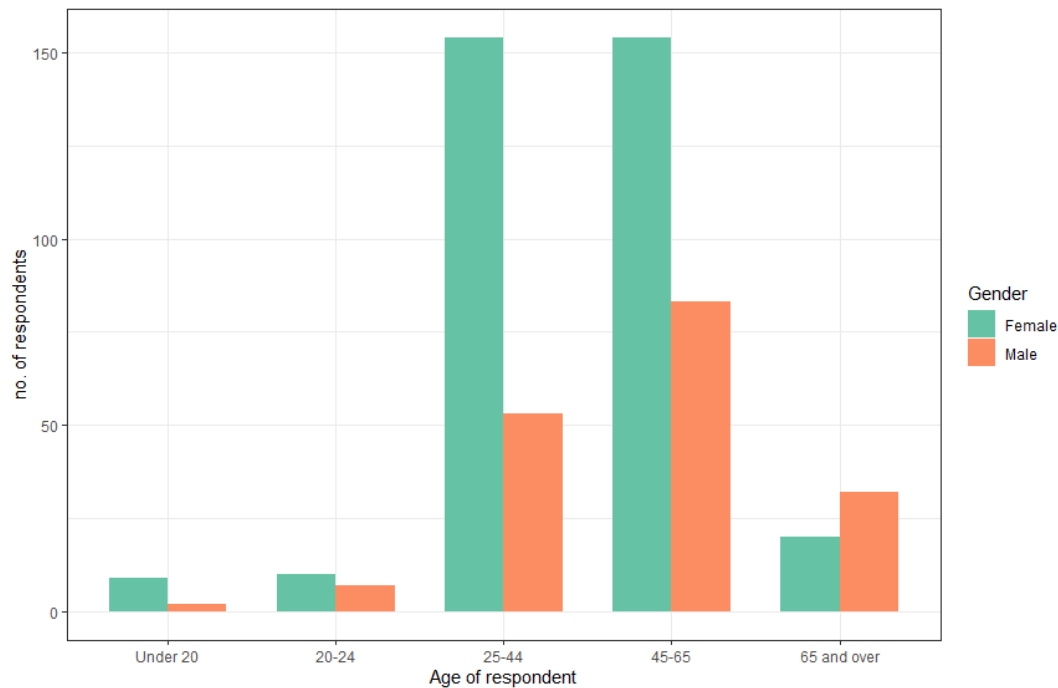


Figure 3 Age distribution of 2019 questionnaire respondents, by gender

4.2 Site Popularity

In the 12 months preceding the survey, 99.6% of those surveyed had visited a beach, river or lake in the Taranaki region. This result is not likely representative of the full population, however, as people using recreational areas would be more likely to undertake the voluntary online questionnaire. Perhaps more indicative are the results of Sport New Zealand's Active NZ 2018 Participation Report (Sport NZ, 2019), which uses the electoral role to representatively sample the population. The Active NZ report emphasises

the importance and value of access to water recreational areas, with 54% of young people surveyed in Taranaki found to have used outdoor locations such as beaches, lakes, the bush or footpaths for recreation in the week prior to being surveyed. For adults, recreation locations were more varied; with 19% having used sea or coastal areas for recreation, and 11% utilising lakes, rivers or streams in the last week.

Participants of the online survey were asked roughly how many days per year they visited lake, river and beach sites. Of those who responded to the question, beaches were visited more frequently than either rivers, or lakes, with a median of 30, 20 and 10 days per year spent at each type of site respectively (Figure 4). This ranking of beach, river and lakes sites was consistent across both New Plymouth and South Taranaki residents, while Stratford residents frequented beach, lake and river sites roughly equally. Residents of New Plymouth generally visited sites more frequently than residents of the Stratford and South Taranaki, spending a median of 40, 20 and 10 days at beach, river and lake sites, respectively.

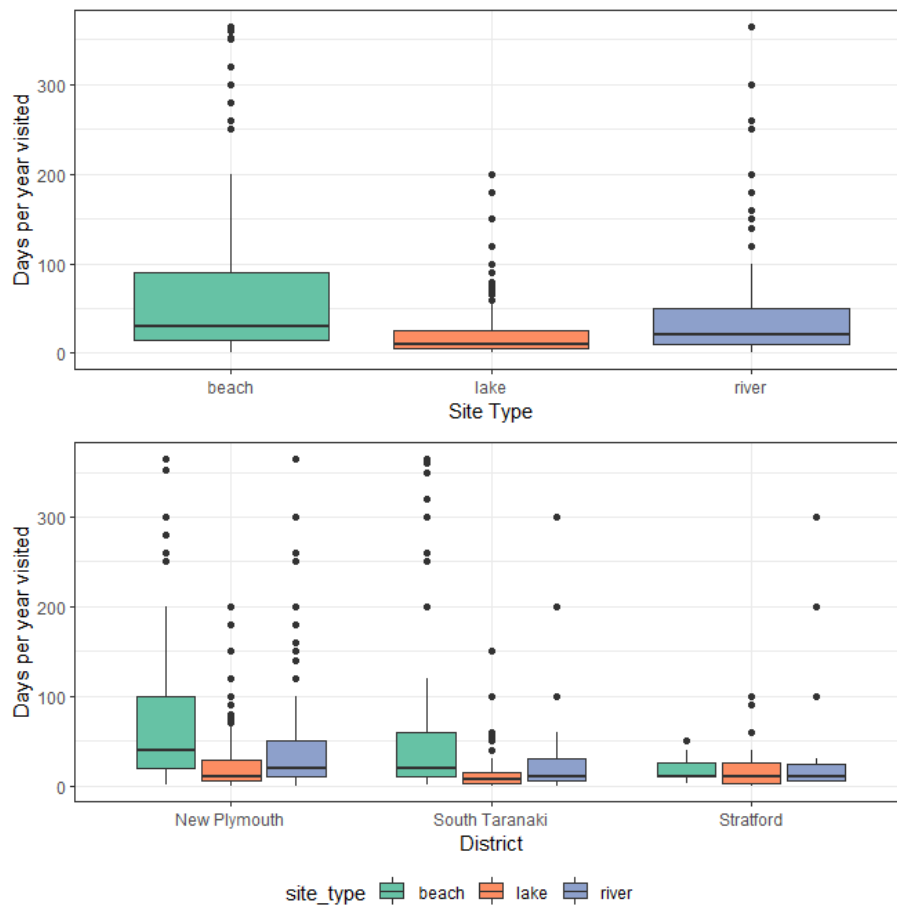


Figure 4 Boxplots of the number of days per year respondents visit beach, lake and river sites. (See Appendix II for an introduction to interpreting boxplots)

Participants were asked to name which particular sites in the region they had visited, as well as which one site they had visited most frequently, over the last 12 months. A comparison of the results from these questions is given in Table 1, along with the 20 most popular sites as observed during the recreational count survey. Note that only one result has been reported in the summary table when two sites are in very close proximity on the same beach/river. (i.e. Back Beach at Paritutu Rock and at Herekawe Stream, and Waiwhakaio River at Te Rewa Rewa bridge and river mouth). Full results can be found in Appendix III.

To rank the popularity of sites from the observational count survey, the mean number of users at each of the 46 observed sites has been calculated for both weekend and weekday use, with the maximum of these two means used to rank the popularity of the site. Public holidays and days with specific events at sites are

not included in the calculation of mean use. Further details of the results of the observational count survey can be found in Section 55.

Table 1 Top 20 most popular sites as per recreational use questionnaire and observational count

Location visited in last 12 months	No. of responses	Most frequently visited site in last 12 months	No. of responses	Observation count	Mean no. users
Coastal Walkway	353	Fitzroy Beach	44	Ōakura Beach	114
Fitzroy Beach	352	Coastal Walkway	31	Ngāmotu Beach	104
Pukekura Park	338	Back Beach	30	Tongaporutu	102
East End Beach	336	East End Beach	29	Fitzroy Beach	92
Ngāmotu Beach	313	Ōakura Beach	29	Coastal Walkway	59
Te Henui River mouth	265	Lake Mangamahoe	25	Back Beach	56
Waiwhakaiho River near mouth	257	Ngāmotu Beach	23	Corbett Park	44
Back Beach	234	Ohawe Beach	20	Timaru Stream	40
Lake Rotomanu	219	Ōpunake Beach	20	East End Beach	38
Ōakura Beach	195	Corbett Park	15	Merrilands Domain	34
Lake Mangamahoe	188	Urenui Beach	12	Ōpunake Beach	34
Lee Breakwater	184	Waiwhakaiho River	11	Lee Breakwater	31
Merrilands Domain	178	Waitara River	10	Lake Ratapiko	28
Urenui Beach	167	Lake Rotokare	9	Lake Rotomanu	26
Ōpunake Beach	163	Lake Rotorangi	9	Waiinu Beach	24
Huatoki River	155	Te Henui (mouth and walkway)	9	Pukekura Park	23
Kawaroa	154	Waitara Beaches	9	Waitara West Beach	23
Dawson Falls	143	Bell Block Beach	8	Wai-iti Beach	22
Corbett Park/Ōakura River mouth	141	Lake Rotomanu	8	Urenui River	20
Ahu Ahu Rd	139	Onaero Beach	8	Lake Rotokare	19

Respondents of the online questionnaire identified 142 unique sites which they had visited in the twelve months from April 2018 - April 2019. A more comprehensive list of site popularities can be found in Appendix III.

As would be expected, the results of the two questionnaire questions aimed at determining site popularity gave fairly consistent results. Fitzroy Beach and the Coastal Walkway were the most popular recreation sites given by questionnaire respondents, with East End, Ngāmotu and Ōākura Beaches also highly popular. These results are corroborated by the results of the observational count survey, in which four of the five sites named above featured in the top five most popular sites by mean number of users (out of the 46 sites observed). Tongaporutu Beach and Estuary was the third most popular beach in the observational count, but did not feature in the top 20 sites from either questionnaire question. This is likely due to the high number of out-of-region tourists who frequent the site. Overall, beaches proved to be the most popular type of recreational site, with five to seven beaches among the top most popular sites in all three survey methods.

Sites along the Waiwhakaiho River, including near its mouth, at Merrilands Domain, and Meeting of the Waters, proved among the most popular river recreational sites regionally. Corbett Park, located at the Ōākura River mouth is the most popular river site outside of the New Plymouth urban area, and was the most popular river site regionally in the observational count. The Te Henui River, near its mouth, also ranked highly popular with questionnaire respondents. This site did not rank so highly in the observational count, but this is likely due to people spending only short spans of time at the site, with walking and cycling being the most popular activities observed at this site.

Pukekura Park, Lake Mangamahoe and Lake Rotomanu were the most popular lake sites among questionnaire respondents, although of these only Lake Rotomanu allows a full range of water recreation activities. Observational counts at Pukekura Park and Lake Mangamahoe likely did not accurately capture the number of people using these sites, with a wide network of tracks at both sites. The regional lakes Ratapiko, Rotorangi and Rotokare also featured in the top 20 sites in the questionnaire and observational counts, proving popular for water sports, camping and picnicking.



Figure 5 Examples of the range of recreational activities catered for by the Coastal Walkway

There are some notable differences between the most popular sites listed by residents of the region's three districts. Figure 6 gives a spatial representation of the top 10 most popular recreation sites by respondents' district of residency. While many New Plymouth beaches, Pukekura Park and the Coastal Walkway feature in the top 10 most popular sites for residents of all three districts, it is apparent that there is also a strong preference for local recreation sites. Sites such as Lake Rotokare, Dawson Falls and the Patea River are in the top 10 most popular sites recorded for Stratford residents, while the southern beaches of Ohawe, Waihi and Patea are popular amongst South Taranaki Residents. Ōpunake Beach was the most popular site outside of the New Plymouth District, making the top 10 most popular sites for both Stratford and South Taranaki residents. At a glance, Stratford and South Taranaki residents generally travel further to reach the recreational site of their choice, while the top ten popular sites used by New Plymouth district residents are all within-district, with the furthest top-ten site from New Plymouth being Ōakura Beach.

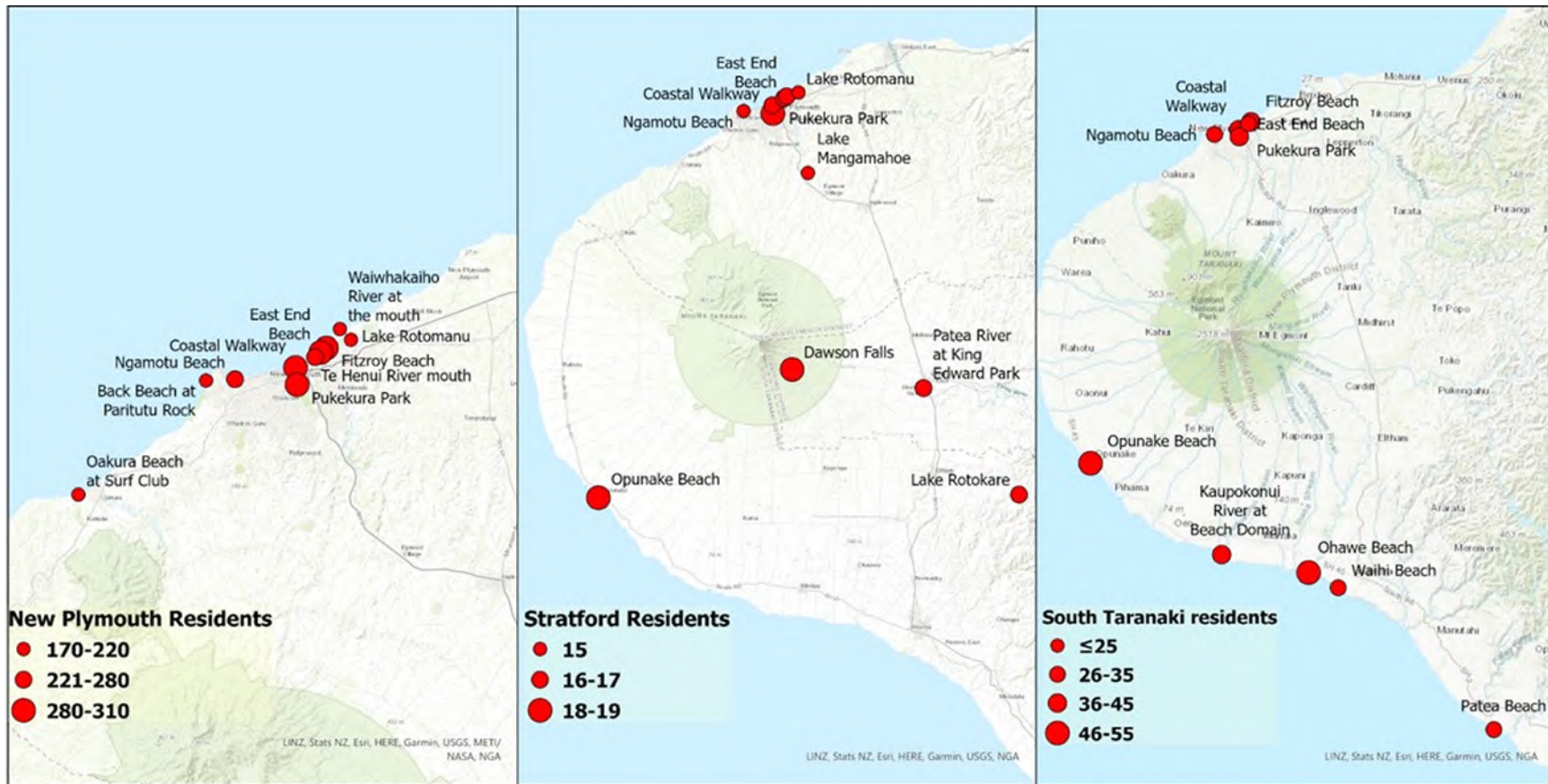


Figure 6 Top 10 most popular recreation sites for residents of each district, based off the number of respondents who had visited each site within the last 12-months

4.3 Activities at Sites

Respondents were asked to list what activities they undertook while visiting each of beach, lake and river sites, with the results shown in Figure 7. Walking was the most popular activity undertaken across all site types, with swimming being a close second at both beach and river sites. Scenic appreciation was also a popular activity at all site types, while surfing was the third most popular activity at beaches.

These results match well with those from the Sport New Zealand Active NZ 2018 Participation Report (Sport NZ, 2019), which indicated that running (58%), playing (41%) and swimming (35%) were the most popular types of weekly recreational activities for young people in Taranaki, while walking (54%) was the most popular form of exercise for adults. Swimming (33%), marine fishing (12%), canoeing/kayaking (8%), and surfing/body boarding (8%) also featured as top recreational activities for adults.

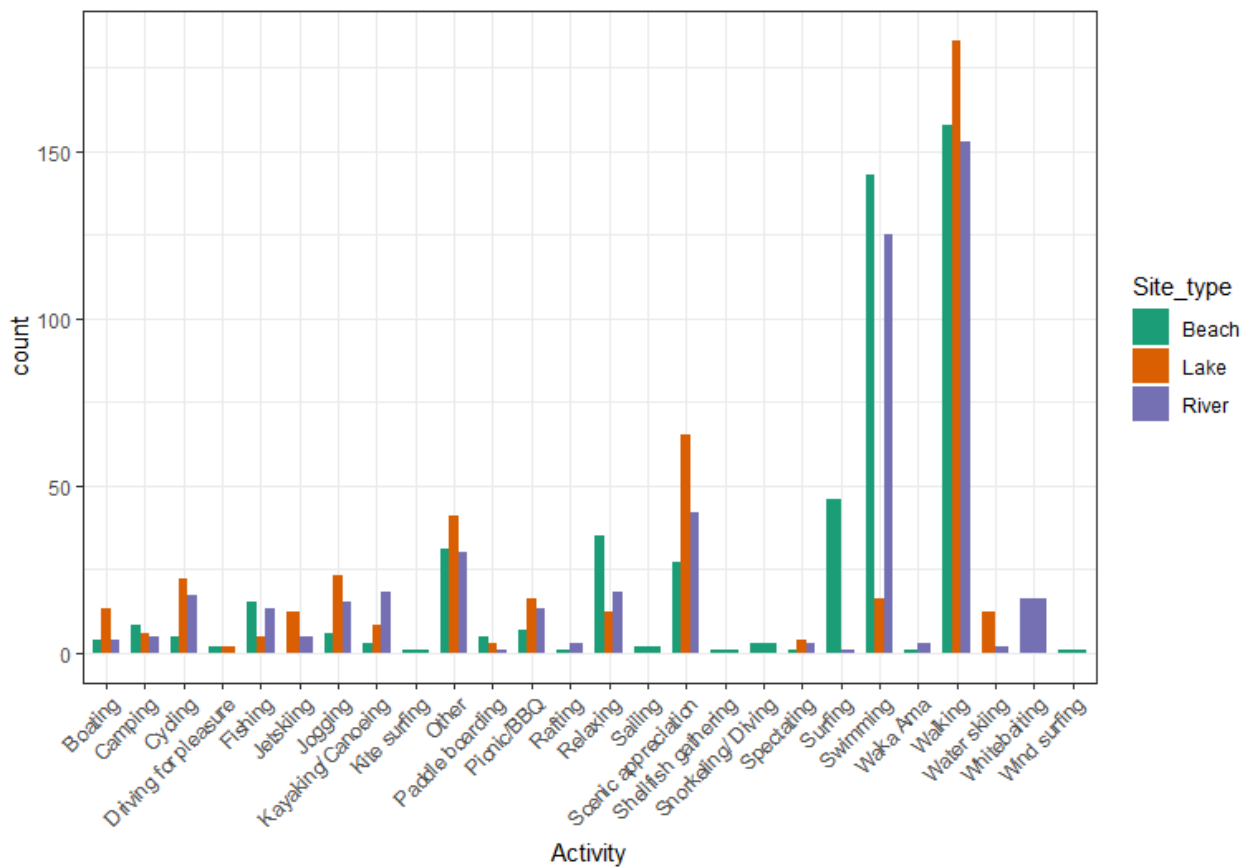


Figure 7 Activities undertaken by survey respondents at Beach, Lake and River sites

4.4 Reasons for visiting sites

A summary of the top three ranked reasons respondents had for visiting their favourite recreational site is given in Figure 8. "Close to home" was given by 205 of the 524 (39%) respondents as their top reason for visiting a site, with 317 (60%) having it as a top-three ranked reason. Closeness to home was the top reason for visiting a site for residents of both New Plymouth and South Taranaki districts, and the 2nd most stated reason for Stratford residents. This result agrees with the spatial distribution of the top-ten most popular sites given by residents of each district, which were found to strongly favour sites local to urban areas (Figure 6).

Other main reasons for visiting a site include ease of access (a top-three reason for 40% of respondents), natural character (34%), and the site's suitability for a particular activity (31%). These four top reasons were

shared between New Plymouth and South Taranaki residents, with the site not being crowded being an additional important value for South Taranaki residents. The top reasons for visiting a site were slightly different for Stratford residents, with natural character, closeness to home and peace and quiet filling the top three spots. It should be noted, however, that the low sample of Stratford residents answering the survey mean these results may not be fully representative.

Of the 63 respondents who put down "other" as one of their top three reasons for visiting a site, 29 commented on the site's suitability for dog walking, nine visited the site for horse riding, and nine for surf conditions.

4.5 Factors discouraging visits

Of the survey respondents, 56% indicated that they do not visit beaches, rivers and lakes as often as they would like (Figure 9). While 44% of all respondents visited sites as often as they'd like, there were notable differences between districts, with only 36% and 27% of South Taranaki and Stratford residents, respectively, visiting as often as liked, compared to 48% of New Plymouth residents.

The main reasons people gave for not visiting as often as desired, however, were consistent across the three districts, with work and family commitments dominating (Figure 10). For Stratford district residents, the travel time to recreational sites was a larger factor discouraging visits than for New Plymouth and South Taranaki residents. This is perhaps unsurprising given the greater distance between Stratford district and popular beach locations.

Comparatively, lack of transport or the cost of transport, were infrequently the cause of people not visiting recreation sites as much as they'd have liked. Of those who listed other reasons for not visiting, the weather was the leading cause (21 answers), along with time restraints (29 answers). Water quality and pollution was a factor for seven respondents, while horse restrictions were a factor for five.

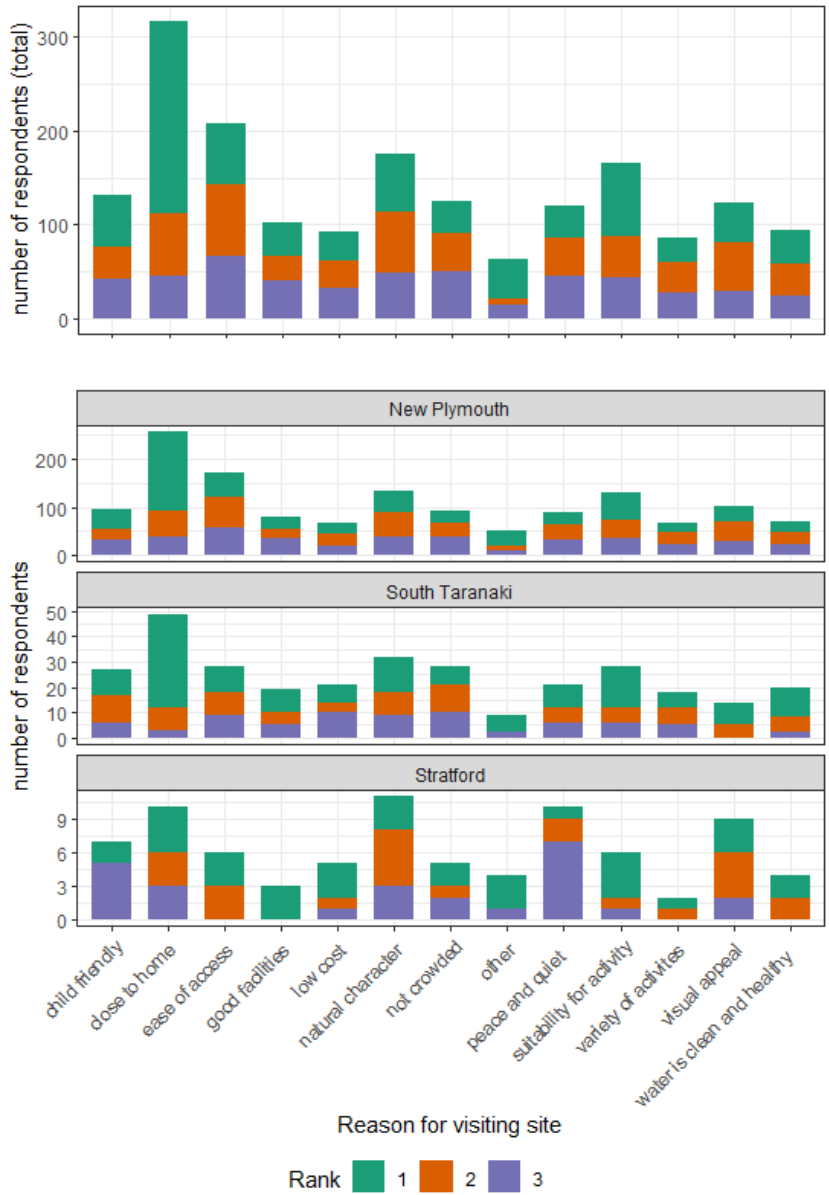


Figure 8 Survey respondents' top three reasons for visiting their favorite recreational sites, split by district residency

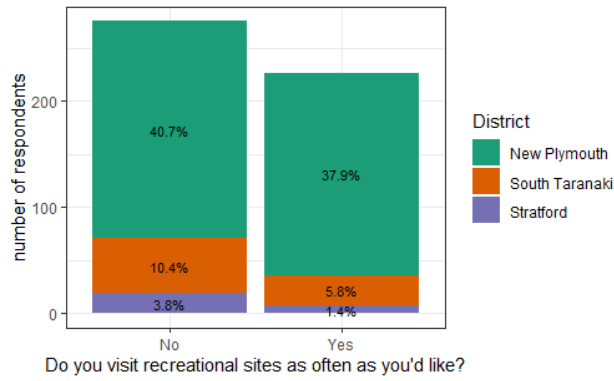


Figure 9 If residents of Taranaki’s three districts visit recreational sites as often as desired (Respondents who didn’t name their district of residence are not included)

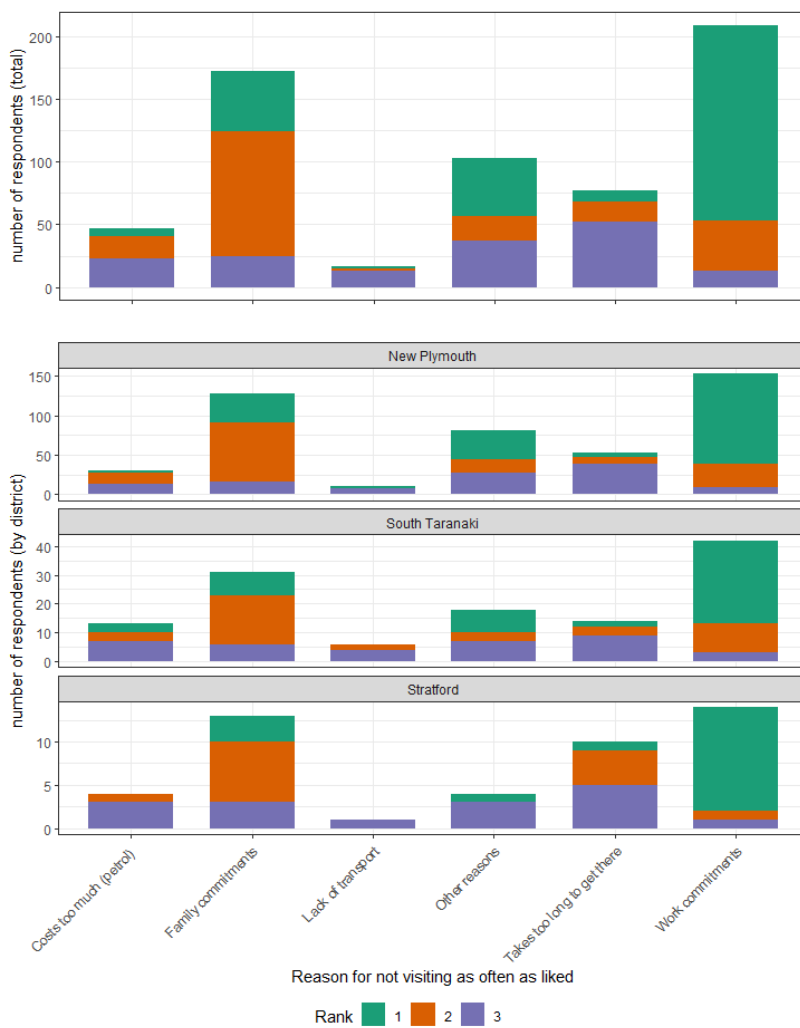


Figure 10 Survey respondents’ top three reasons for not visiting recreational sites as often as they would like

4.6 Public access

Respondents were asked if, in the last year, they had been able to gain access to the water-recreational sites that they wanted to visit around the region. 87% of respondents indicated that they had been able to access sites, while 13% had not (Figure 11). Of those that had not been able to gain access, the reason most often given was that the access or entrance was closed (20%), or that access was too difficult (12.3%). Landowner issues were rarely a reason for lack of access (6.2%). The issue of water quality was raised by 22% of those who could not gain access to a site they wished to (specified under "Other reason"), a matter which is discussed further in Section 4.7 Other reasons for not being able to access sites included lack of awareness of access, restrictions on horse riding and dog walking, and erosion/storm damage.

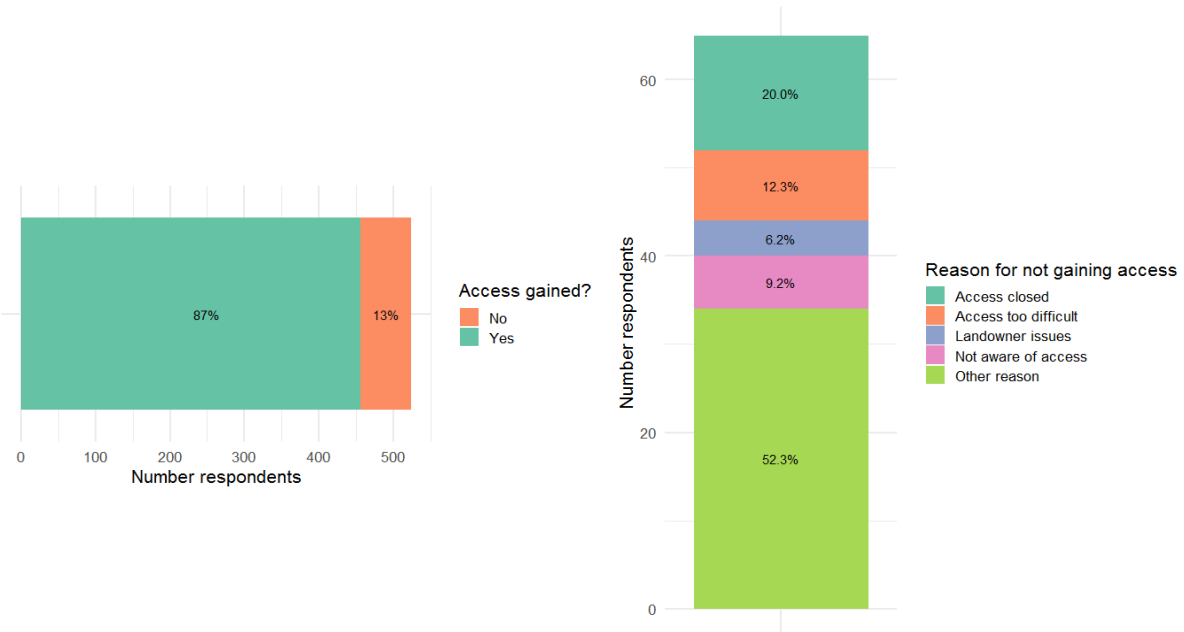


Figure 11 Left: Proportion of survey respondents who could gain access to their desired recreational sites in the past year. Right: Reasons given when access was not able to be gained

Overall, 85% of respondents rated the perceived level of access to recreational sites within Taranaki as being either good or excellent, with only 2.3% rating access as being poor (Figure 12). A selection of quotes representing comments made on the level of accessibility are:

"Access across private land very good, as well as excellent public access."

"A lot of beach access is restricted by private farmland"

"I don't want access to be easy to my favourite river swimming. It will ruin the reason I go if too many people because of crowds and disrespect of environment."

"Taranaki has wonderful access and opportunities to visit beaches that are not crowded or polluted. Farmers allow reasonable access which is very good. Some tracks could be better maintained."

"The diversity of options is superb. The Coastal Walkway a huge asset to the region."

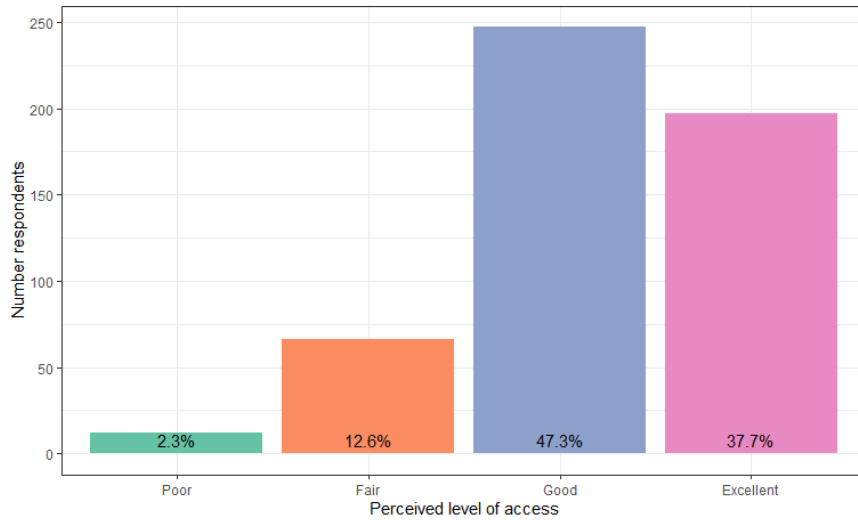


Figure 12 Perceived level of access to recreational sites in Taranaki by survey participants

4.7 Water quality

Survey respondents were asked to rate their overall perception of the water quality of Taranaki’s rivers, lakes and beaches (Figure 13). While 84.6% of respondents perceived beach water quality to be good or excellent, the perceived water quality of rivers and lakes was less resounding. Only 59.1% and 48.7% of respondents consider water quality at river and lake sites, respectively, to be good or excellent. Around 17% of respondents considered water quality at both Taranaki’s rivers and lakes to be poor.

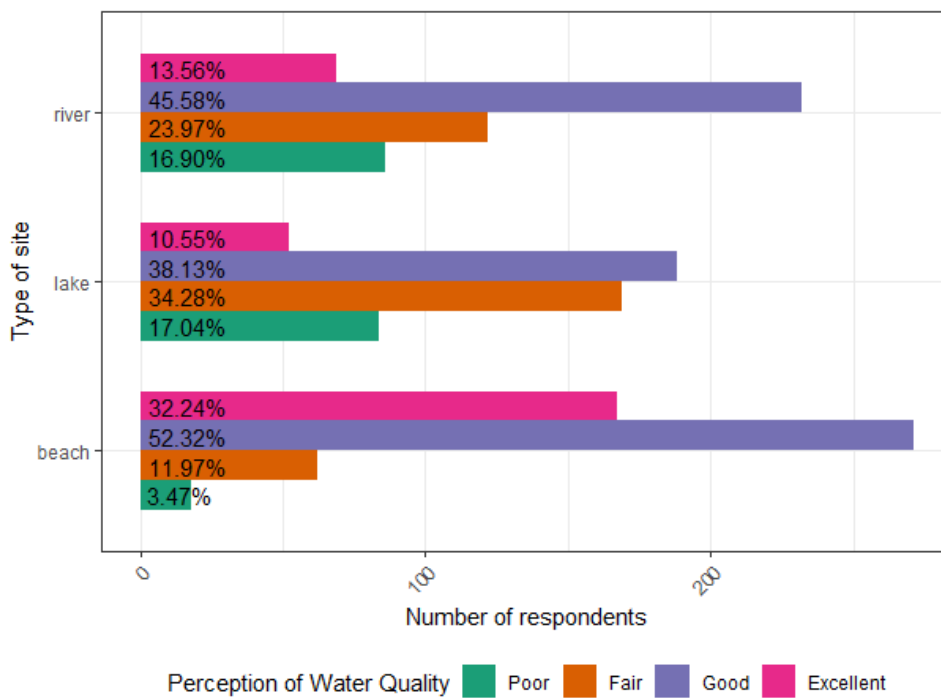


Figure 13 Perceived level of water quality at recreational sites in Taranaki

The perception of water quality given by survey respondents reasonably reflects the results of the recreational water quality sampling programme undertaken by the council over the 2018-2019 bathing season (TRC, 2019. TRC 2019a).

In this programme, 14 beach sites, 3 lakes and 13 river sites were sampled regularly between November 2018 and March 2019. *Escherichia coli* (*E.coli*) (for freshwater sites), and Enterococci (for marine sites) levels are compared against Ministry for the Environment guidelines (MfE, 2003), with levels deemed to be at one of Surveillance, Alert or Action level. At Surveillance and Alert level, a site is deemed suitable for swimming and other recreational uses, although additional sampling and contamination identification is undertaken at Alert level. At Action level, a site is deemed unsuitable for recreation, with warning signs erected at the site, and full investigations as to contamination sources undertaken.

For the 2018-2019 bathing season, 243 samples were taken across the 14 beach sites regionally, with 91.8% of these samples returning Surveillance mode Enterococci levels. At the 13 river sites monitored, 59.1% of the 193 samples taken returned Surveillance mode *E.coli* levels, while at the three lake sites monitored, recreational water quality was deemed at Surveillance mode on 78.7% of the 47 sampling occasions. It is noted, however, that most of the samples were taken during fine weather, and that *E.coli*/Enterococci levels can be expected to be higher, and water quality generally worse, during and closely following rainfall.

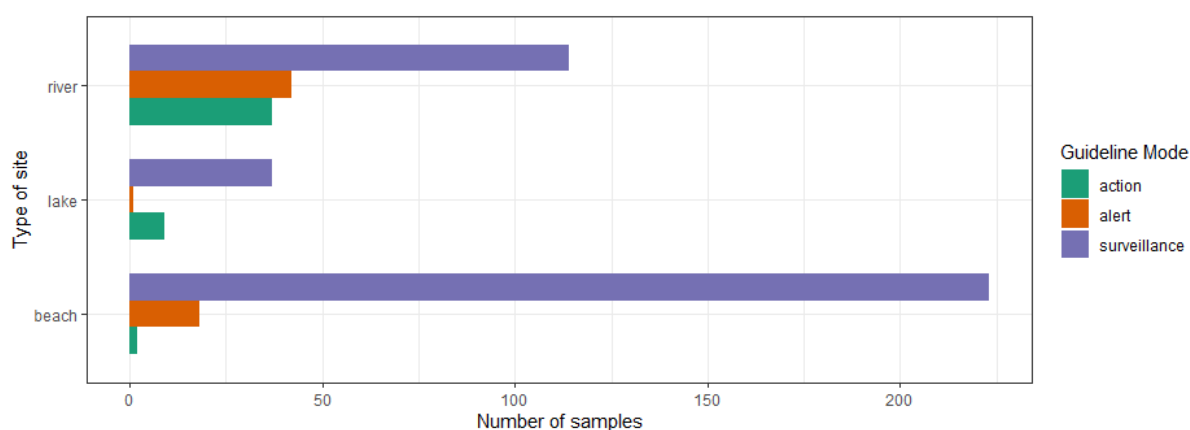


Figure 14 Number of *E.coli*/Enterococci samples falling in each band of the MfE contact recreation guidelines over the 2018-2019 bathing season

While water quality at the most popular beach bathing sites was generally good during the 2018-2019 season, there are known recreational water quality issues at some of the most popular fresh water recreational sites. These include the Waiwhakaiho River, near the mouth, which was found to be the most popular fresh water recreational site in the region. Here, *E.coli* levels were found to be either at alert or action level during all 13 regular samplings during the 2018-2019 season.

A number of other river recreational sites in the region experience *E.coli* issues, especially after heavy rainfall, due to the influence of upstream agricultural areas.

4.8 Site Conditions

Respondents to the public recreational use survey were asked if they checked on conditions prior to visiting a site (Figure 15). Just over 44% of participants responded that they do not check conditions, while 33% sometimes check and 23% always check. While 50% of those over 45 years old did not check on conditions, younger age groups tended to check conditions more, with only 36% of these age groups not checking prior to visiting. Of the people that did check conditions, the weather and tide times were the conditions most regularly checked (Figure 16), with only around 28% of respondents checking on water quality conditions prior to a visit. In line with these answers, when respondents were asked which websites they used to check conditions, MetService was the most used website, giving weather and tide conditions. In contrast, less than 20% of respondents checked either regional or district council websites, with even fewer checking the Land, Air, Water Aotearoa (LAWA) website (Figure 17).

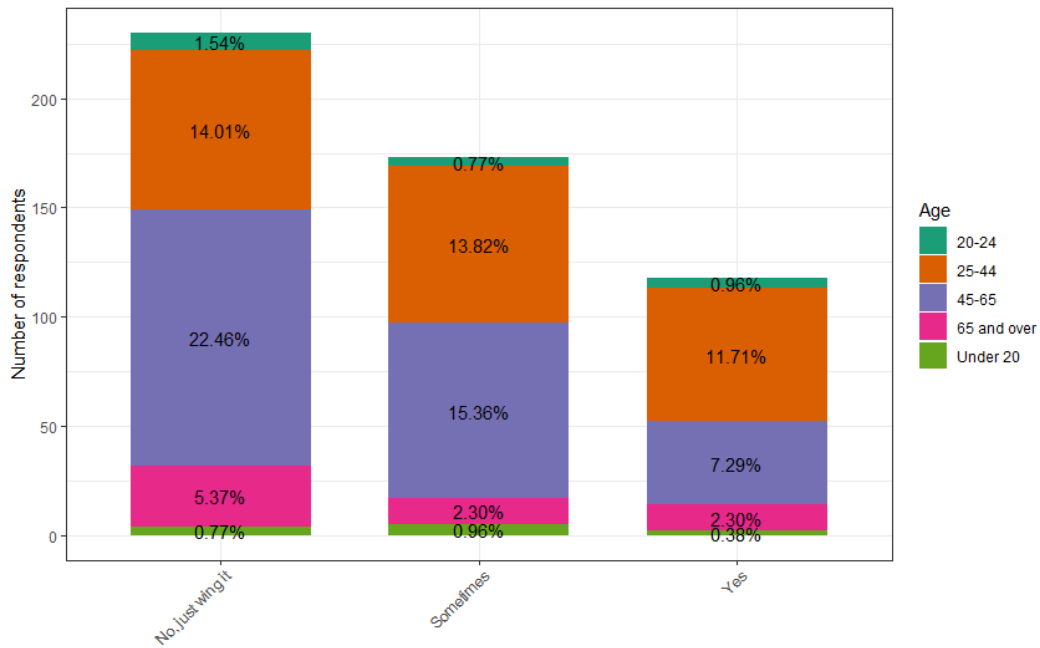


Figure 15 Do questionnaire respondents check conditions prior to visiting a recreational site?

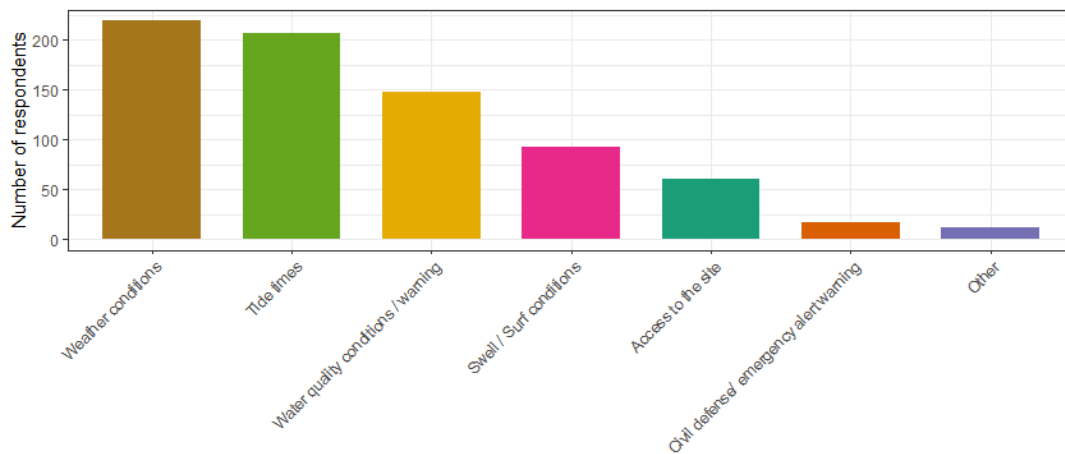


Figure 16 Conditions checked by survey respondents prior to visiting a site

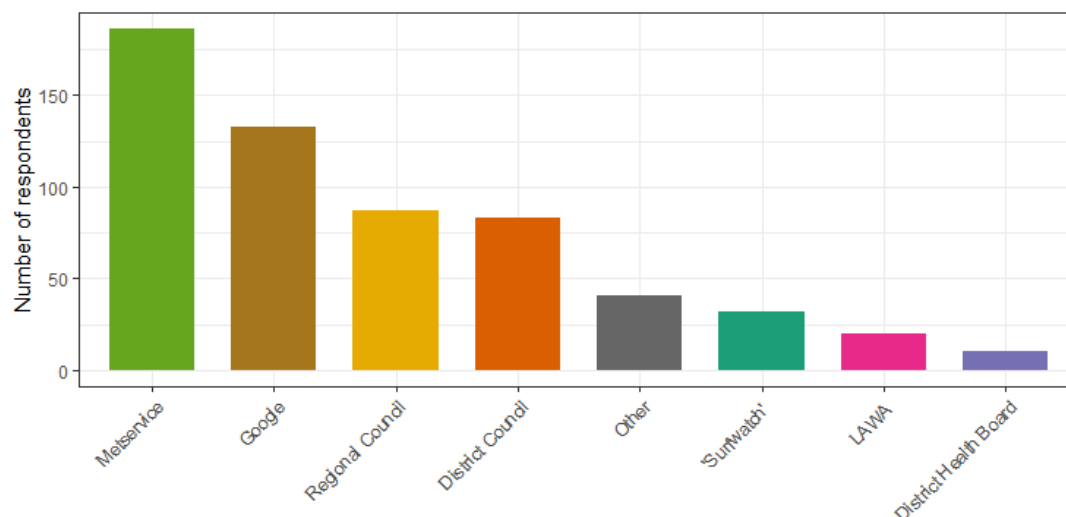


Figure 17 Websites used when checking site conditions prior to a visit

Questionnaire participants were asked a range of questions regarding the impact of water quality warnings at recreational sites. During the summer bathing season, the latest results from the Council's recreational water quality monitoring programme are published online as soon as they are available. Sampling results and the current health warning status can be found on the regional and district councils' websites and the national LAWA website. Given the lack of respondents checking these websites, it is worth reviewing the effectiveness of water quality result communication, and avenues through which public awareness of our region's sites' recreational water quality status can be raised.

In addition to communicating results via websites, the Council informs district councils and Taranaki District Health Board (TDHB) of water quality results as they come in. In the case of Alert and Action level results, the district councils erect warning signs at the relevant recreational sites, with these signs remaining up until a surveillance level follow-up sample is obtained. In the case of New Plymouth District sites, permanent signs are present at most sites, displaying the latest recreational health warning status.

When asked if they would still visit a recreational site even if a water quality warning was in place, 50% of respondents answered that they would not, while 30% would sometimes still visit, and 20% would always still visit (Figure 18). However, when asked if they would still use the water when a water quality warning was in place, 77% of respondents replied that they would not, 19% replied maybe, and 4% said that they would still get in the water (Figure 19). The main reason given for still visiting a site despite a water quality warning being in place was local knowledge and familiarity with the given site (Figure 20). A common reason given was also that whether people still visited a site or not depended on who was undertaking the activity. An assumption might be made that while people may still use the site personally, they would not make the same decision for others, e.g. children.

Would you visit when a water quality warning is in place?

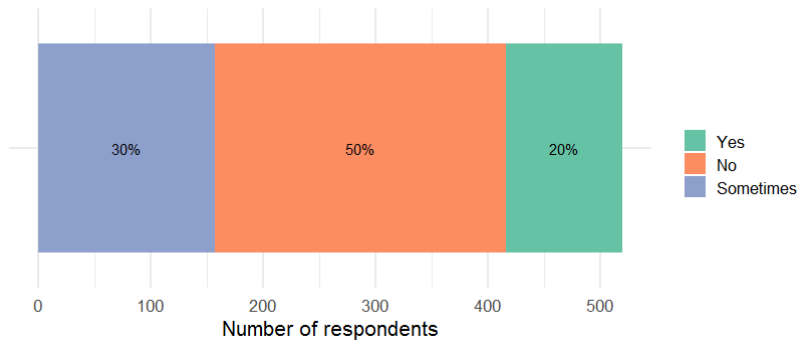


Figure 18 If questionnaire respondents would still visit a recreational site when a water quality warning is in place

Would you still use the water when a water quality warning is in place?

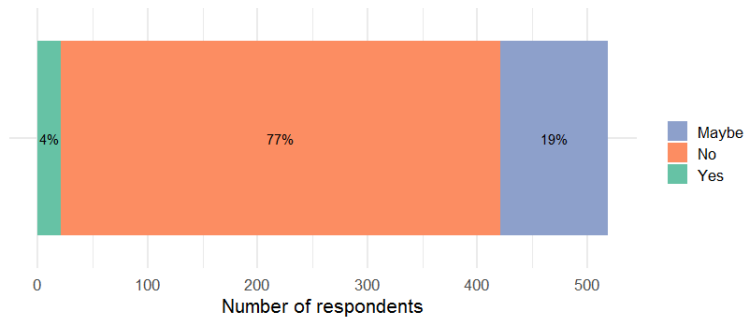


Figure 19 If respondents would still use the water when a water quality warning is in place

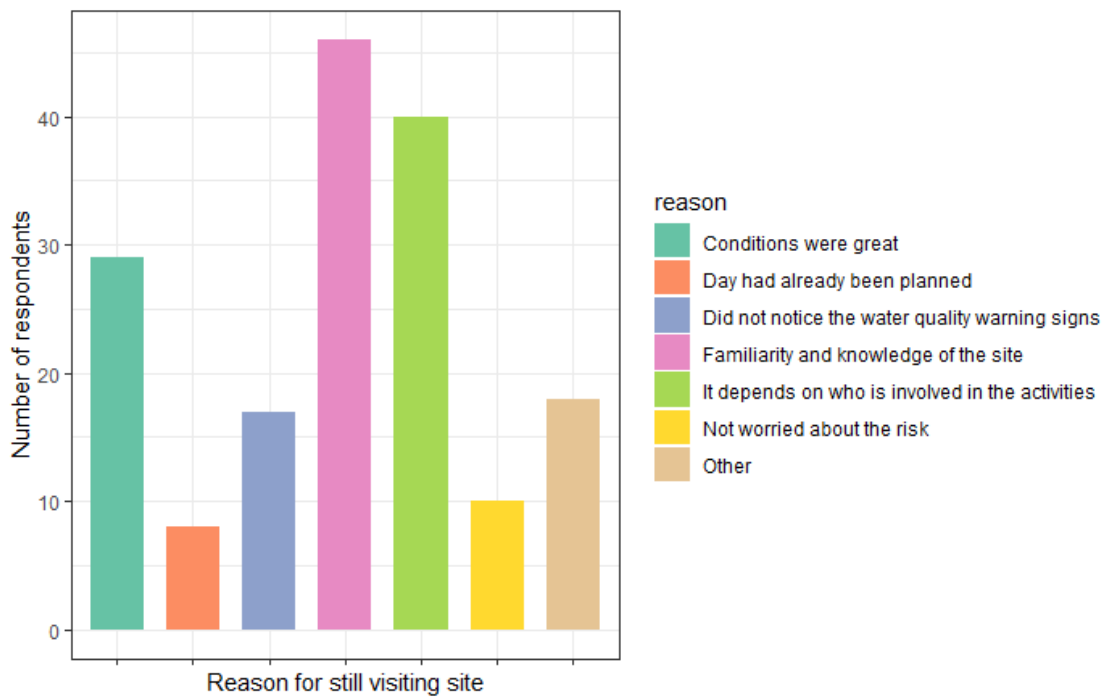


Figure 20 Reasons for still visiting a site despite a water quality warning being in place

5 Observational count results

As well as providing validation of the results of the online questionnaire, the observational count survey provides some more in-depth information on recreational use habits at individual sites. The following section provides an overview of the main results of the observational count survey.

5.1 Site Popularity

As mentioned in Section 4.2, the relative popularity of sites recorded in the observational count reflected the results of the online survey well. Comparisons of the number of people counted at the various beach, river and lake sites throughout the observational count survey are shown using boxplots in Figure 21 through to Figure 23. Days where large events or holidays biased the number of people at sites are not included in this analysis, but are discussed in Section 5.4.

The Coastal Walkway was consistently popular and had the highest median number of users of all sites in the count survey. Of the coastal sites, Fitzroy, Ngāmotu and Ōakura beaches, along with Tongaporutu, also had high usage, but with more variation in numbers depending on the weather conditions and time of day. Outside of public holidays and special events, the highest number of people at a site at one time was observed at Ōakura Beach, with 473 users.

Of the river recreation sites, Merrilands Domain had the highest median number of users, followed by Timaru Stream and Corbett Park. The highest number of users at a river site at one time was recorded at Corbett Park, with 219 people using the site. As the results of the online questionnaire suggested, the number of people recreating at lakes was generally fewer than at either river or beach sites. Of the lakes surveyed, Lake Rotomanu was the most popular, followed by Lakes Ratapiko, Rotokare and Rotorangi (at the Patea Dam), and Pukekura Park. It is noted that the number of people counted at lake sites is likely to be an under-representation, with boat users on the larger lakes, and exercisers at sites such as Pukekura Park, Lake Mangamahoe and Barret's Domain being under-counted.

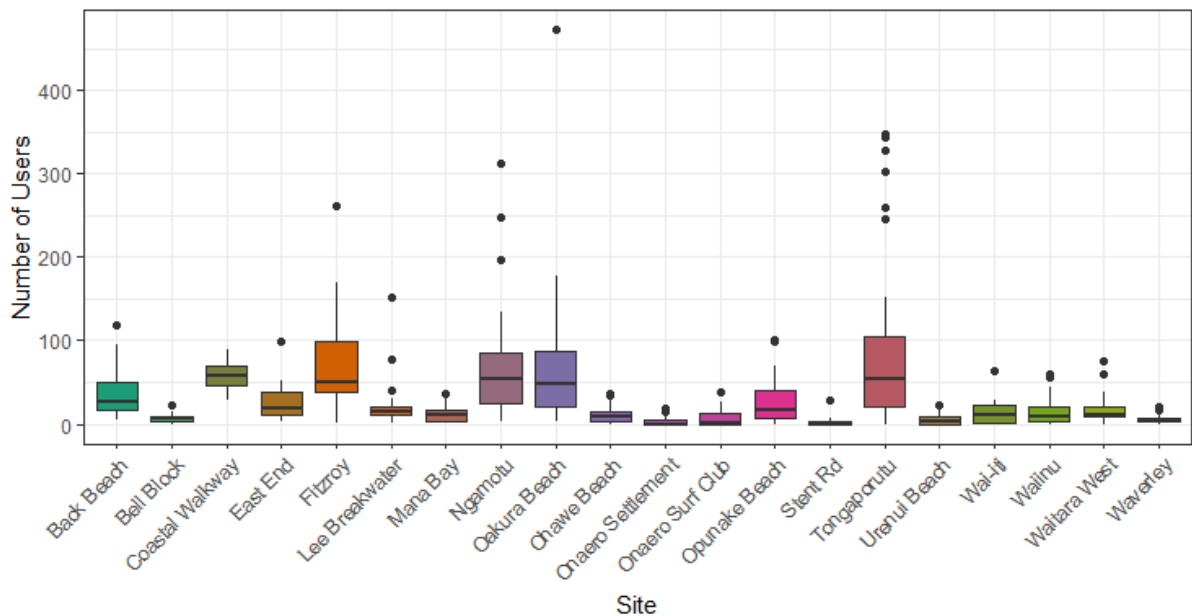


Figure 21 Boxplots of total number of users counted at beach sites throughout the observational count survey

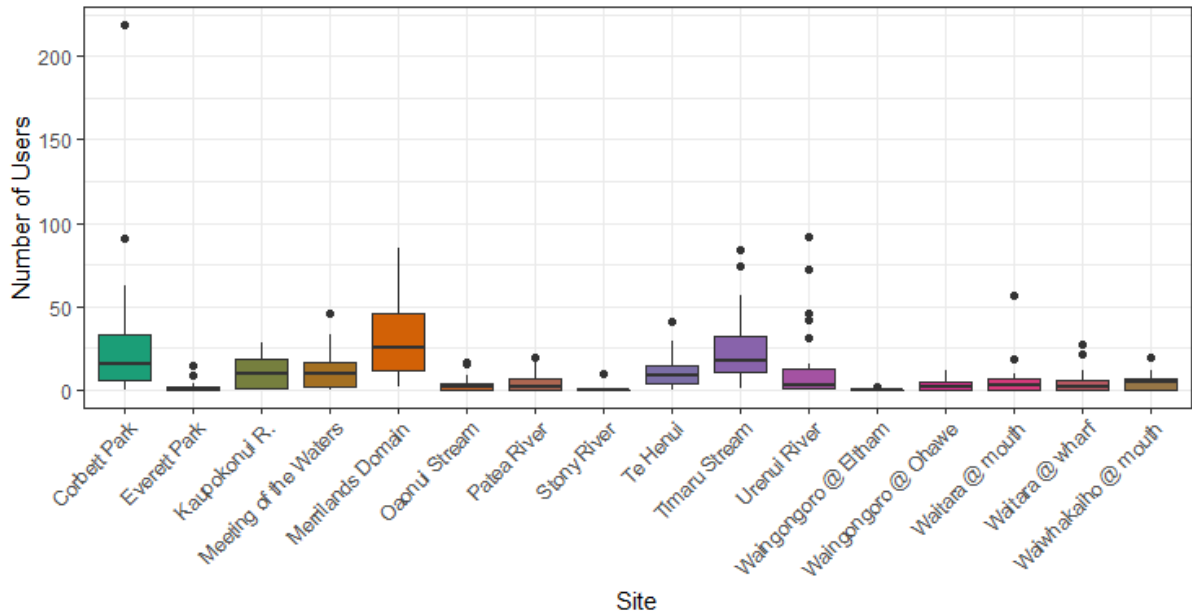


Figure 22 Boxplots of total number of users counted at river sites throughout the observational count survey

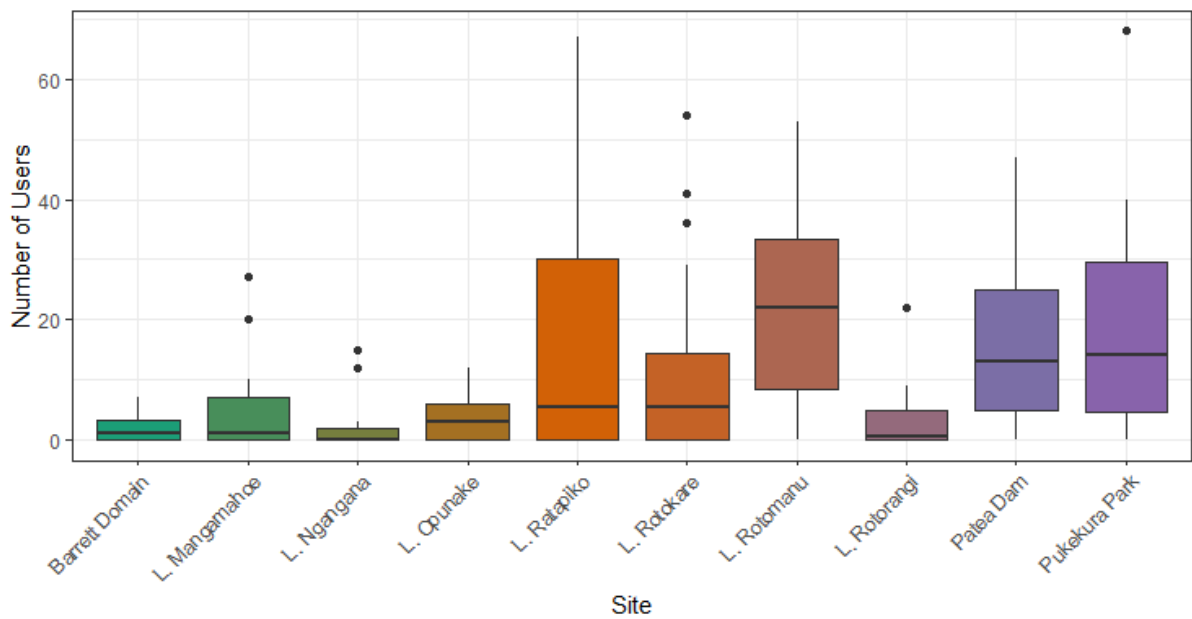


Figure 23 Boxplots of total number of users counted at lake sites throughout the observational count survey

5.2 Activities at Sites

During the observational counts, notes were taken on what activities people were undertaking at each site. With eight rounds of counts performed at each site (excepting Tongaporutu), some insights can be gained into what sites people tend to prefer for different activities. The mean number of people counted swimming and walking, which were the two most popular activities listed by questionnaire respondents (Section 4.3), are shown in Figure 24 and Figure 25, respectively. As suggested by questionnaire responses, beaches proved the most popular spots for swimming, with the highest mean number of swimmers observed at

Fitzroy, Ngāmotu and Ōakura beaches. Some river sites also proved very popular swimming spots, with Corbett Park and Merrilands Domain, respectively, having the 4th and 5th highest mean number of swimmers. The Coastal Walkway (at the Wind Wand), and Pukekura Park were the two most popular walking sites across the observational count locations, with other spots along the Coastal Walkway, such as Te Henui River mouth and Lee Breakwater, also proving popular (Figure 25). Sites along the Coastal Walkway also proved popular with cyclists, with the highest mean number of cyclists observed at the Wind-Wand, Te Henui River mouth, and the mouth of the Waiwhakaiho River (observational counts were not undertaken at the mountain bike park at Lake Mangamahoe).

The three most popular surfing spots in the observational count were found to be Back Beach, Fitzroy and Ōakura Beaches, respectively, while the coastal sites of Lee Breakwater, Waitara West, Wai-iti and Tongaporutu were found to be most popular for fishing. It must be noted, however, that angling numbers in rivers are under-represented in the count results due to the nature of the count locations. Tongaporutu Beach was a top site for camping, along with Waiinu and the lake sites of Rotomanu, Rotokare and Lake Ōpunake, all of which have designated freedom camping sites. When it came to picnicking, the New Plymouth sites of Ngāmotu Beach and Merrilands Domain proved most popular, followed by Pukekura Park and Lake Ratapiko.

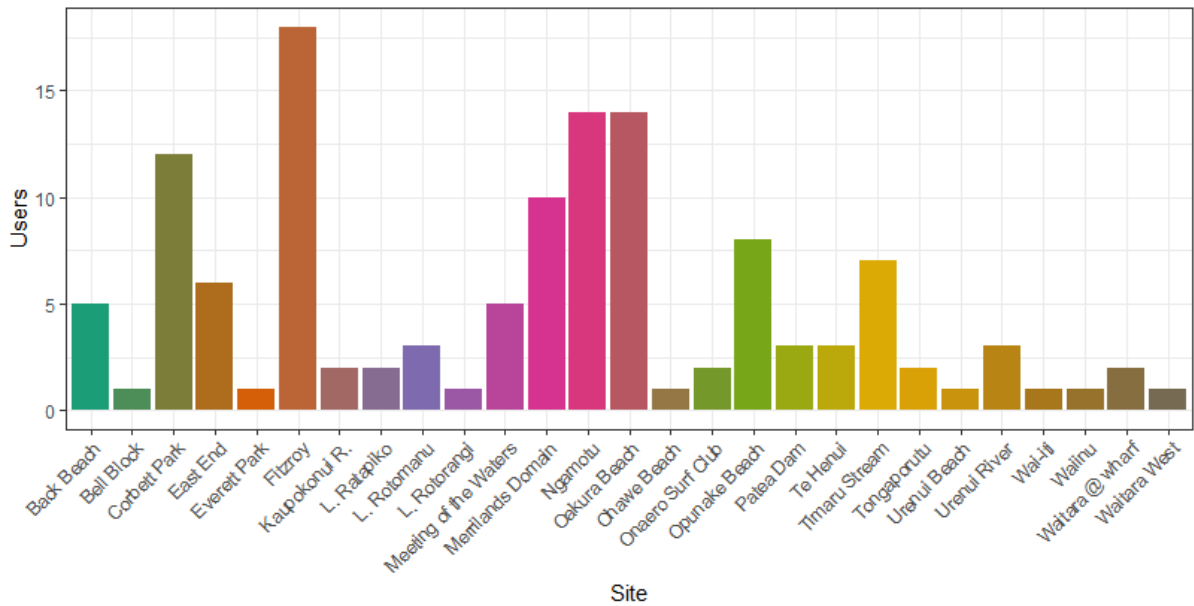


Figure 24 Mean number of swimmers recorded at sites during the observational count survey

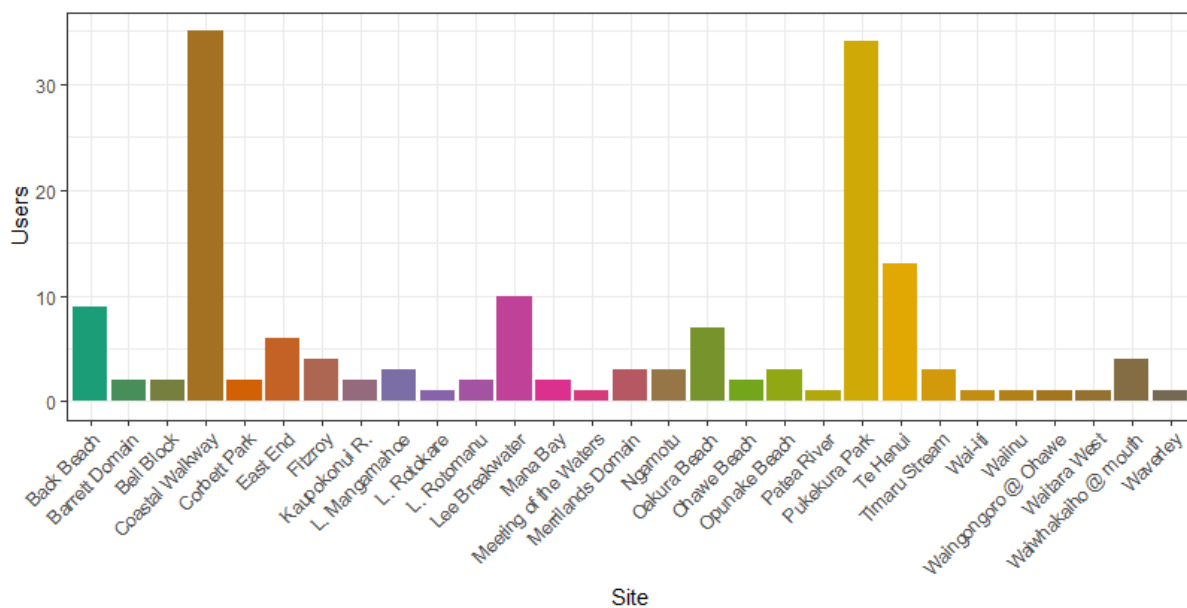


Figure 25 Mean number of walkers recorded at sites during the observational count survey

5.3 Temporal Patterns

The method used for the observational count allows for some insights to be made into what time of day people prefer to use various sites, and what usage is like during the weekdays compared to weekends. A summary of this information, grouped by site type, is presented in Figure 26, while individual site summaries are presented in Appendices IV and V.

While there was some variation at an individual site scale, in general there was no significant difference between the numbers of people recreating at sites across the three different recorded periods during the day. There was, however, a greater number of people recorded using sites during the weekend compared to weekdays. This pattern is notable across all three site types, and is irrespective of time of day. The result is not surprising given the main reasons questionnaire respondents gave for not visiting sites as often as they'd like were work and family commitments. The difference in weekday and weekend use patterns is most apparent at lake sites. As well as work commitments, the difference in use numbers at lakes is likely due to the generally greater distance required for travel to lake recreation sites from the main population centres, as well as the time required for the particular activities most popular at lake sites, including boating and fishing.

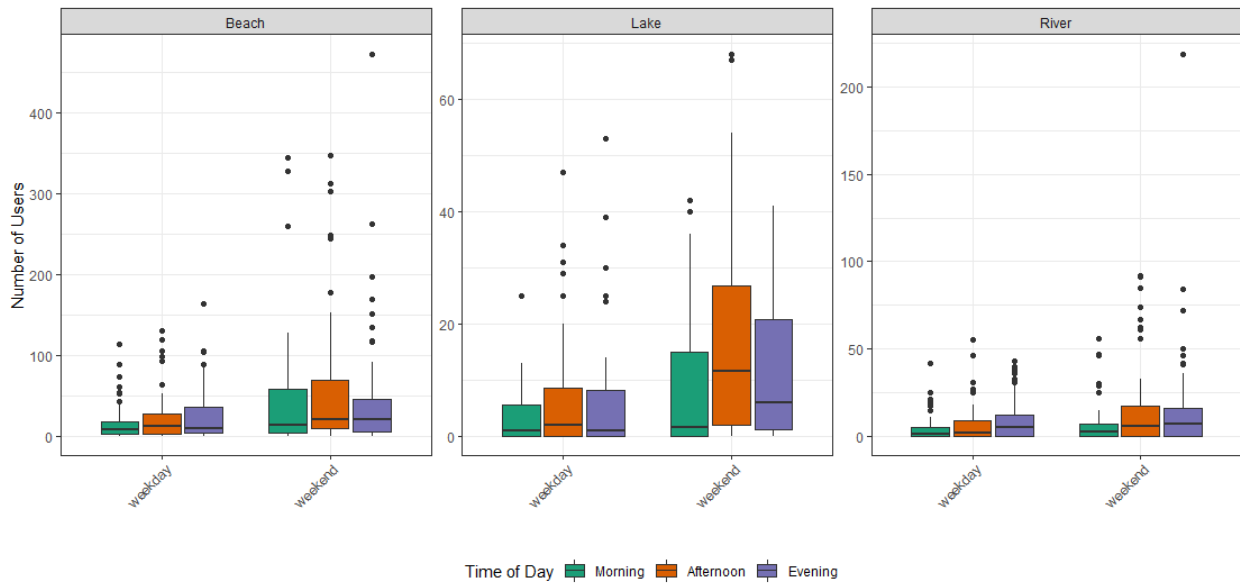


Figure 26 Distribution of the number of total users at different times, grouped by site type (note that the three plots have different scales)

5.4 Events

A number of the region's favourite recreational locations are used as venues for organised community and public events throughout the year. These events are not included within everyday use of the region's beaches and waterways, and as such have not been included in the reported results of the observational count survey. They do, however, draw large influxes of people to the region's water recreation sites, and are both drivers of, and results of the investment that goes into access and facilities at the region's recreational sites.

Examples of large events that took place over the 2019–2020 summer include, but are not limited to:

- Beach festivals and markets at Ōakura, Fitzroy, Ōpunake, and Ngāmotu Beaches, amongst others, which attract crowds in the thousands.
- Surf life-saving, surfing, ultimate-frisbee and sailing competitions at the likes of Back, Ōakura and Ngāmotu Beaches.
- WOMAD, held over 13th-15th March at Pukekura Park, which attracted an average of 17000 people per day.
- The TSB Festival of Lights (Pukekura Park), and Te Kupenga International Stone Sculpture Symposium (Coastal Walkway), which occurred over longer time frames (December/January), and are thus incorporated into the observational count results.

In the case of WOMAD, observational counts undertaken during the 13th/14th of March suggested the Coastal Walkway was twice as popular as usual, while more than five times the usual number of users were observed at the Tea House on the Lake spot in Pukekura Park.

5.5 Activities not captured by Observational Count

There are a number of water-based activities that are not fully captured in the observational count due to either their seasonal nature, or more mobile/remote nature. These include trout fishing, kayaking and whitebaiting, as well as land-based activities in reserves around waterways, such as walking and biking.

In 2019, the whitebaiting season ran from August 15th through November 30th, and was thus missed by the observational count survey. A formal survey of whitebaiter numbers has never been undertaken in Taranaki, however whitebaiting is highly popular in the region, with 27 regional waterbodies identified by Fish and Game New Zealand as being of regional importance for trout fishing and/or whitebaiting.

Similarly, while trout fishing is popular in Taranaki, it is hard to get an accurate gauge on numbers given the remote nature of the activity, and the large number of fishable rivers running out from the national park. Fish and Game New Zealand records show, however, that around 1% of Taranaki's population hold trout fishing licenses with just over 1000 licenses sold in the year to July 2020 (Fish and Game Taranaki, 2020).

Lastly, while surfing was captured as a popular activity at the sites visited within the observational survey, there are numerous other breaks along the Surf Highway that were not covered. With approximately 50 different breaks spanning along the coastline, the regional popularity of surfing is likely underestimated in the results of the observational count survey.

6 Comparison with previous access surveys

Previous questionnaires on recreational use and access in Taranaki were carried out in 1980-1982 (published 1984), and 2007. In 1984, 213 responses to the postal questionnaire were received, while in 2007 418 completed surveys were processed. In 2019, 524 full and valid questionnaires were processed. Where appropriate, questions in the 2019 public questionnaire were posed in a way to allow comparison with the previous surveys, giving a picture of how recreational habits have changed over the last three decades. Given the difference in the number of responses processed in each survey, in the following results are compared as percentages where possible.

6.1 Site Popularity

Ranking and locations of the top 20 most frequently visited sites in the region, as given by respondents of the 1984, 2007 and 2019 public questionnaires are shown in Figure 27. Many locations have remained among the most frequently visited across all three surveys, with Fitzroy Beach the most frequently visited site regionally in both 2007 and 2019. Ngāmotu Beach, which ranked 2nd most frequently visited in both 1984 and 2007, also remains popular. While this site only ranked as 6th most frequently visited in 2019, it had the 2nd highest average number of users in the observational count. Other sites that have featured in the top 10 most frequently visited in all three surveys are Ōakura, Ohawe, Ōpunake and Back beaches. In addition to these beaches, the Coastal Walkway has proved popular since its opening, ranking as the 4th most frequently visited site in both 2007 and 2019.

While Lake Mangamahoe and Lake Rotomanu have remained among the three most frequently-visited lake sites, Lake Rotokare has increased in popularity and ranked as the second most frequently visited lake in 2019. This increase in popularity goes hand in hand with the formation and success of the Rotokare Scenic Reserve Trust, which was formed in 2004 and has restored the lake and its surrounds into a 230ha conservation sanctuary. While the reserve is enclosed by a predator and pest-free fence, which was completed in 2008, the area and lake remains open to public for recreation both on and off the water.

There has been little change in the most popular river recreation sites over the years, with sites such as Corbett Park, spots along the Waiwhakaiho, and Te Henui Stream, remaining popular. It should be noted that while Corbett Park didn't appear in the top 20 'most frequented' sites in the 2007 questionnaire, it was the third most popular site in the observational count that year.

There are a number of sites that have seen a decline in popularity over the three iterations of the recreational use survey. One such site is the Kaupokonui River at the Beach domain, which did not feature in the top 20 'most frequently visited' sites in the 2019 survey, and has had a steady decline in the number of people counted using the site. A possible reason for this is water quality issues that have affected the river, with health warnings regarding both swimming and food gathering having frequently been in place at the site in recent times. Other sites which have seen a decline in popularity in the 2019 survey include the Waingongoro River at Eltham, and the Stony River. In the case of the former, the site is located at the Presbyterian Camp in Eltham, with popularity of the site dependent on what access is available to the site on a particular day.

The total number of sites visited by respondents to the public questionnaire in 2019 was 142, compared to 65 in 1984, and 85 in 2007. It is hard to know if, or to what extent, there has been a genuine increase in sites visited, however, as the online survey method used in 2019 allowed for the specification of a far greater number of sites than the postal surveys of either 1984 or 2007. For the same reason, the number of respondents who said that they had visited any one site was generally much higher in 2019 than either of the previous surveys.

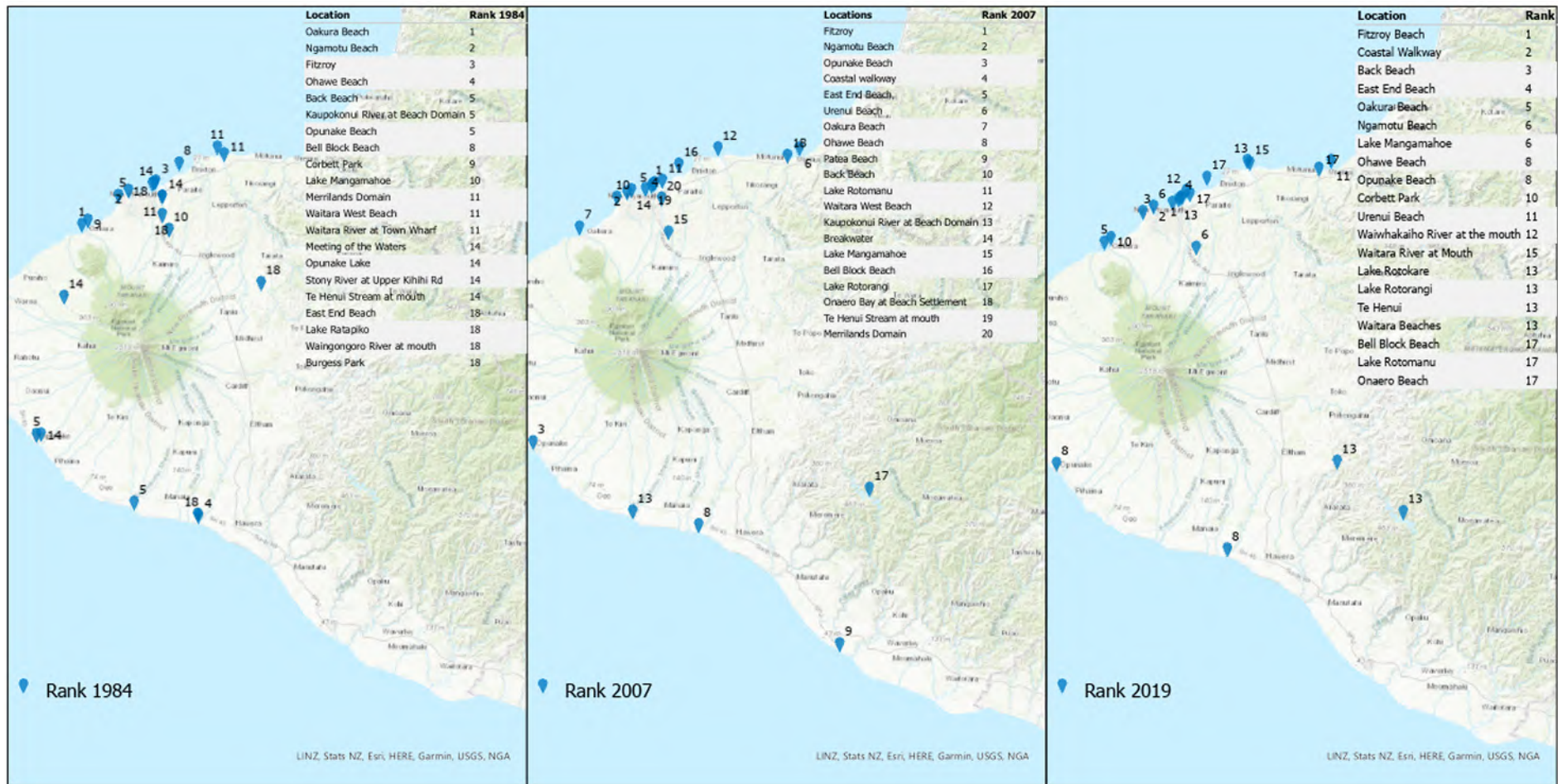


Figure 27 Top twenty most frequently visited recreation sites, from responses to public recreation questionnaires in 1984, 2007 and 2019

6.2 Activities at Sites

In both 2007 and 2019, walking was the most popular activity undertaken at recreational sites, irrespective of whether it was a beach, river or lake site. This is a change from the 1984 survey, where walking was a distant 6th most popular activity. Swimming, which was the most popular activity undertaken in 1984, was the second most popular activity at both beach and river sites in 2007 and 2019, but only the 4th (2007) and 7th (2019) most popular activity at lake sites. Lake sites continue to prove more popular for scenic appreciation than both beaches and rivers, however, with scenic appreciation ranking 3rd most popular activity at lakes in 2007 and 2nd in 2019.

At beach sites, surfing appears to be becoming more popular. Ranked as the 9th most popular activity in 1984 and 2007, surfing was the third most popular activity undertaken at beaches by questionnaire respondents in 2019, with 9% of respondents rating it their main beach activity.

At river sites, there has been an increase in the popularity of kayaking and canoeing amongst survey respondents, with 18% listing it as their main river activity in 2019, ranking it 4th most popular activity. In 2007, kayaking rated as only the 16th most popular river activity, and it didn't feature at all in the 1984 survey.

A full comparison of the popularity of activities at the different site-types between 2007 and 2019 is given in Appendix VI. 1984 results are not included in this appendix due to the lack of consistency in result format.

6.3 Reasons for visiting sites

Across all three iterations of the recreational use survey, the proximity of a recreational site to home has consistently been the top reason why people visit a particular site (Figure 28). This result is mirrored in the spatial distribution of the twenty top ranked "most frequently visited" sites from each survey, in Figure 27. Here, the top ranked sites are predominantly clustered around the major population centres of the region, including sites near Ōpunake, Hawera, Ōakura and Urenui, as well as many around the New Plymouth urban area.

The suitability of a site for activities has remained the second most important reason for visiting a site, along with the natural character of the site. The suitability of a site for children is less important as a deciding factor for visiting a site now compared to in 1984. In addition, compared to both the 1984 and 2007 surveys, and having an un-crowded site, or a site with low-cost, were less frequently the main reason for visiting a site.

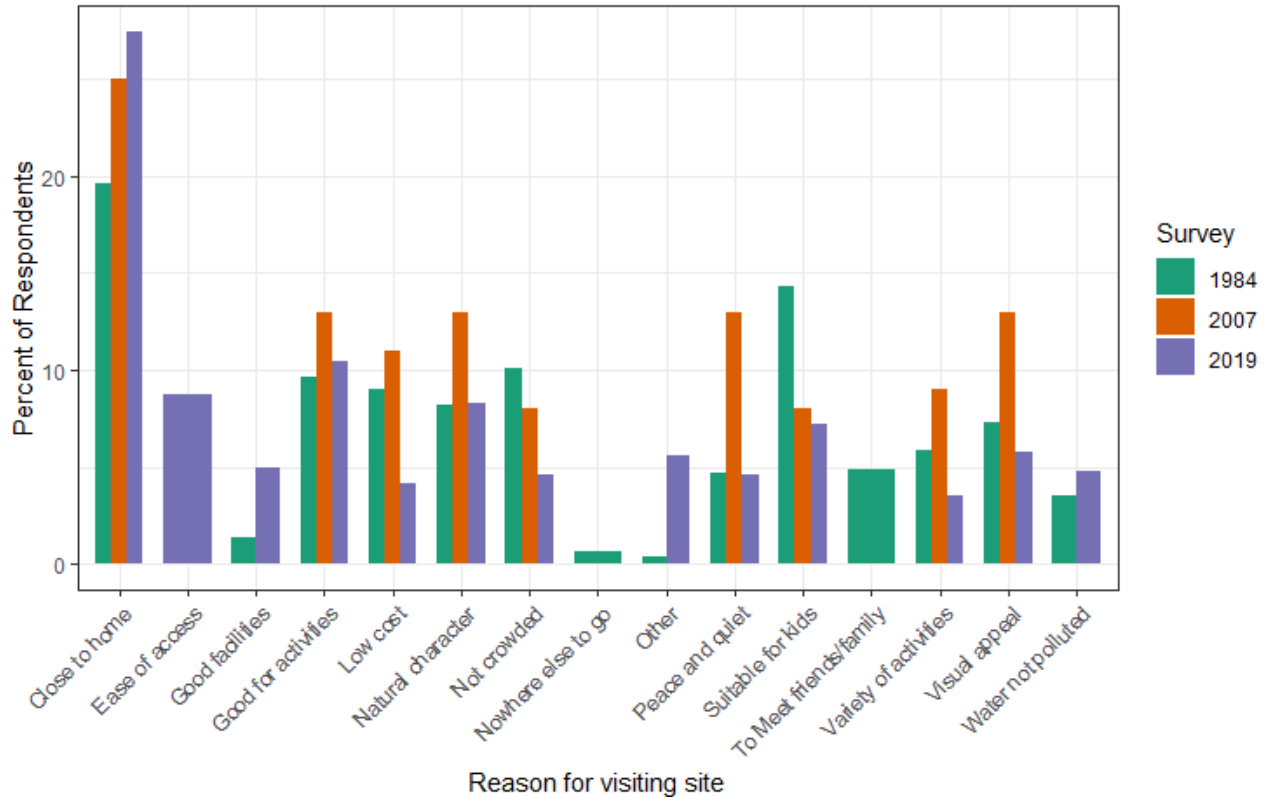


Figure 28 Reasons given for visiting a certain recreational site, 1984-2019.

The top reasons for people not visiting recreational sites as often as they like remain to be time-limitations (Figure 29) such as work and family commitments, or the travel time to a site being too long. These results match with the top reason people visit a site being its proximity to home. Compared to previous surveys, the cost of a site, or a lack of transport to reach the site, were less frequently the top reason for not visiting sites.

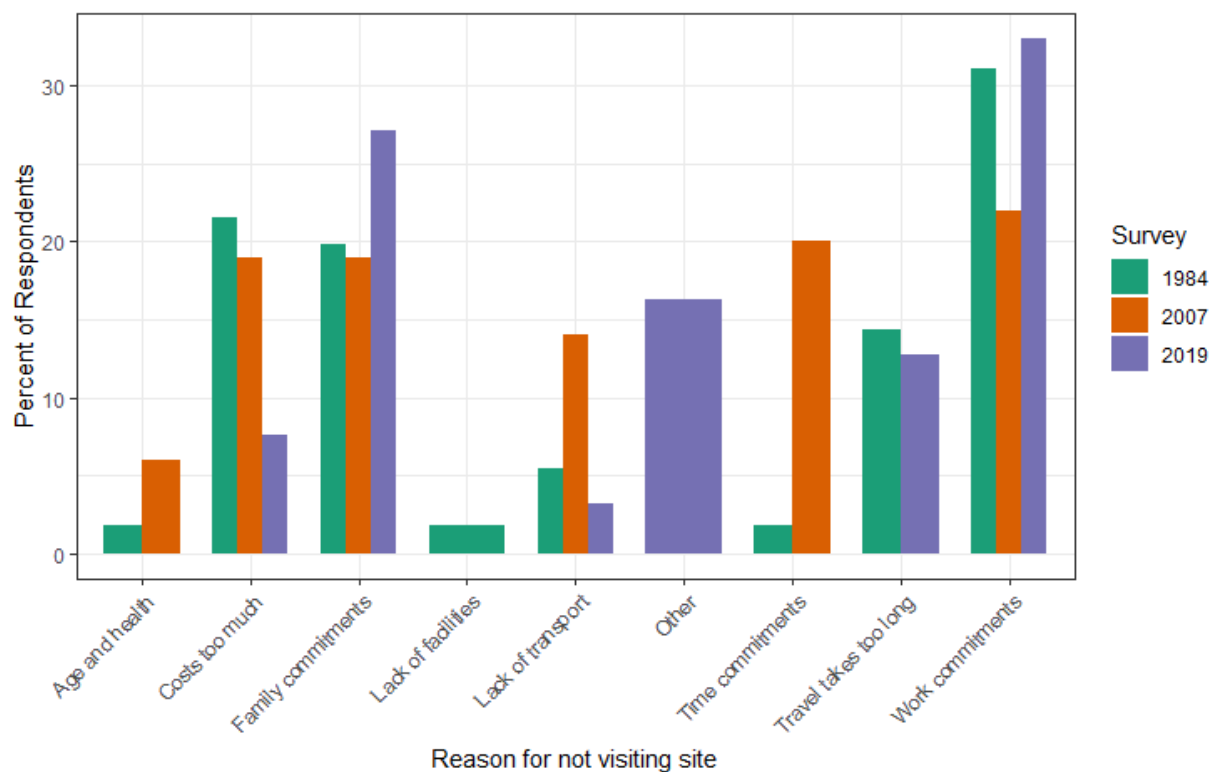


Figure 29 Reasons given for not visiting a site, 1984-2019. Note that 'time commitments' and 'age and health' were removed as a specific option in the 2019 survey

6.4 Public Access

The perception of public access levels to recreational sites has remained relatively constant between the 2007 and 2019 surveys, with 10% and 12% of respondents, respectively, saying that they had not been able to access sites. The main reasons for not accessing a site remain to be closed gates/access. Or the access being too difficult. Only around 1% of all respondents to both the 2007 and 2019 surveys were denied access by land owners. Of note is that water quality was frequently raised as an access issue in the 2019 survey.

6.5 Water Quality

Overall, there has been a notable decrease in the perceived standard of water quality at recreational sites between 2007 and 2019. While the perceived level of water quality at beach sites remains relatively high, with over 80% of respondents deeming it 'good' or 'excellent', at lake and river sites the picture is not so good. 17% of questionnaire respondents view water quality in Taranaki rivers and lakes as being 'poor', compared to 7 and 4%, respectively, in 2007.

This change in the public perception of water quality in Taranaki reflects the increased publicity and focus on water quality at a national level over the last decade. The results also reflect the actual state of water quality in the region, and show that the Council has significant work to do to improve water quality in the region's lakes and rivers.

Table 2 Perceived water quality at Taranaki beaches, lakes and rivers, 2007 vs 2019 (percentage of respondents)

	Beaches		Lakes		Rivers	
	2007	2019	2007	2019	2007	2019
Excellent	30	32	12	11	17	14
Good	59	52	54	38	57	46
Fair	10	12	26	34	21	24
Poor	1	3	7	17	4	17

7 Discussion

Results from the online questionnaire and observational count give a generally consistent picture of the most popular recreational spots in the region. According to the online questionnaire, the Coastal Walkway, Fitzroy Beach and Pukekura Park are the three regional sites that are visited by the widest range of people. Fitzroy Beach and the Coastal Walkway were also recorded in the online questionnaire as being the most frequented sites, and had the highest median number of users recorded at them across the observational count survey. Other beaches central to New Plymouth, including Back, Ngāmotu and East End beaches also remain highly popular.

Regionally, access to recreation sites is deemed to be relatively good, and is rarely the primary reason for people not visiting a site. Rather, the main factors restricting questionnaire respondents from visiting sites as often as they'd like are time restraints such as work and family commitments, along with the time taken to travel to sites. In line with this, respondents stated that proximity to home was the main factor influencing what sites they choose to visit. This importance of having easy to access recreational sites close to home is further reinforced by the spatial distribution of the sites most often frequented by residents of the region's three districts (Figure 6). For New Plymouth and South Taranaki residents in particular, these sites are clustered around the main population centres of the respective districts.

Together, these findings emphasise the importance of local authorities focusing on the maintenance and enhancement of facilities and the ease-of-access at recreation areas close to population centres under Policies 6.7 and 8.3 of the RPS.

An example of one such successful initiative is the Coastal Walkway, which now spans 13km of the New Plymouth coastline, from Ngāmotu Beach in the south to Bell Block in the north. First opened in 2003, sites along the Coastal Walkway made up five of the top 10 most popular locations in the 2007 recreational questionnaire, and seven of the top 10 in the 2019 questionnaire. The walkway has been touted as one of the region's top assets, and allows easy access from both the centre and suburbs of New Plymouth to the multiple beaches, streams, estuaries and parks located along the promenade. Access from New Plymouth suburbs to the coast has also been enhanced in the last decade through the development of walkways along many of the city's urban streams. This has included the upgrade of the Mangati Walkway (2011), Waiwhakaiho Walkway (2012), Huatoki Walkway (2012-2014) and Te Henui Walkway (2013).

Going forward, further development of the Coastal Walkway is likely, with NZTA and NPDC having committed \$4 million each towards a proposed 10km extension of the walkway north to Waitara. Initiatives are also underway in other parts of the region, with, for example, the Ōpunake Lions Club developing the Ōpunake Loop Trail, an 8km long loop connecting the town's beaches, lake and historical sites.

In general, the most popular recreational sites in the region, and the reasons why people visit particular sites, have remained relatively unchanged since the 2007 recreational use survey. One thing that has changed, however, is people's overall perception of water quality at recreational sites around the region, which is seen to be in decline. This is especially the case for the region's lakes and rivers, where 51% and 41% of questionnaire respondents only deemed water quality to be fair or poor. These perceptions are backed up by the results of the 2019-2020 bathing water quality monitoring programme, where 21.3% of lake site samples and 40.9% of river site samples had *E.Coli* levels at Alert or Action level. Managing the pressure on water resources from agricultural and industrial uses in order to maintain and enhance the recreational attributes of a waterbody can be a tricky equation. However, the findings of this survey emphasise that the Council must increase its efforts in this area in order to meet its requirements and goals under the RMA and Policy 10.3 of the RPS.

While improving recreational water quality around the region must be seen as a priority, there is also significant room for improvement in how the Council communicates the results of recreational water quality testing to the public. It is apparent from the results of the recreational use questionnaire that only a third of

respondents check on water quality conditions prior to visiting a site, with the use of both local authorities' websites or LAWA to check conditions being very low. There is a significant gap between the 56% of people checking water quality conditions and the 77% of people surveyed who said they would not enter the water if a water quality warning was in place. Simple improvements such as more prominent signage at water recreation sites, more prominent placement of recreational water quality status' on the Council's website, and a more extensive use of different media channels for communicating results, would help raise public awareness in this regard.

The results of the recreational use survey show that there are a select number of sites in the region that are highly popular, yet either do not have recreational bathing water quality monitoring undertaken at them, or are only monitored every third summer. In particular, the Waiwhakaiho River at Meeting of the Waters, Lake Rotorangi, and Tongaporutu are three heavily frequented sites with no current water quality monitoring, while Waiinu and Wai-iti Beaches are listed among the 20 most popular sites in the observational count survey, yet are only monitored on a three year rotation. It is recommended that recreational water quality monitoring is undertaken at these sites in the next monitoring summer, with a review undertaken as to whether they should become permanent sites under the SOE programme.

Finally, while the general view of access to recreational areas in the region given by questionnaire respondents was positive, the current format of the survey does not provide sufficient information on specific site access. In order to inform on where and how access to the region's water recreational resources needs to be maintained or enhanced, as under Policies 6.7 and 8.3 of the RPS, further questions could be added to the use and access questionnaire. Such questions could include questions regarding both facilities and access at sites that people visit frequently, as well as what sites they would visit more frequently if not for the current state of facilities and access. Further improvements to the questionnaire and survey format are also recommended, both in order to capture a more representative cross-section of the region's population, and to enable the smooth and robust analysis of results. As examples, the additional distribution of questionnaires through schools, as well as finding participation incentives that appeal to a wider range of demographics, could aid in gaining a more balanced respondent demographic profile, while careful consideration of how questions are formatted will help in data analysis.

8 Recommendations

Following the results of the 2019-2020 recreational access and use survey, the following recommendations are made:

1. THAT a review is undertaken of how the results of bathing water quality monitoring results are communicated to the public, in order to increase the distribution and understanding of the results.
2. THAT five additional sites are monitored for bathing water quality over the next summer season, given their high usage as recorded in the observational count survey. These include Waiwhakaiho River at Meeting of the Waters, Lake Rotorangi, Tongaporutu, Waiinu and Wai-iti beaches.
3. THAT the Council increase its efforts to maintain and enhance the recreational water quality of the region's coast, rivers and lakes.
4. THAT the water recreational access and use survey be repeated in approximately three years.
5. THAT Mātauranga Māori concepts and values are incorporated into the next recreational access and use survey.
6. THAT a review of the distribution methods of the questionnaire is undertaken in order to gain a more balanced representation of the region's demographics in the responses.
7. THAT a review of the questionnaire format is undertaken to enable smooth and robust analysis of the results.
8. THAT the observational count methods are reviewed with a view to increasing consistency between inter-site counts.

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Appendix I

Recreational use online questionnaire

Recreational Use of Coast, Rivers and Lakes in Taranaki 2019 - Production

Start of Block: Introduction

Q00 Where do you go for a swim? Let us know.

Are you a swimmer, a sailor, a surfer or an angler who uses any of Taranaki's beautiful beaches, lakes or rivers? Or do you love to cycle, walk or picnic near them?

We want to hear all about it! By completing this quick survey (seven to 10 minutes), you can help us gauge where and how our beaches, rivers and lakes get the most recreational use, and how users are influenced by the amenities at their favourite haunts and the ease (or otherwise) of access.

This is our third major recreational use survey. Besides giving us an up-to-date picture of the recreational role of our beaches, lakes and rivers, the survey data will give a useful indication of the pressures on water resources at popular recreational spots.

So it's important! The survey runs until 15 May 2019. If you have any questions about the survey, contact the Taranaki Regional Council on 0800 736 222.

Be in to win!

You'll go into the draw for a free two-night stay for two at The Lodge, Pukeiti, with complimentary breakfasts. Be sure to leave your email address if you want to go in the draw for the special break at Pukeiti.



End of Block: Introduction

Start of Block: Background data

Q1 Please state your gender

Male (1)

Female (2)

Q2 What is your age?

Under 20 (1)

20-24 (2)

25-44 (3)

45-65 (4)

65 and over (5)

Q3 What is your email address? (*only provide if you'd like to be included in the prize draw)

Q4 Which ethnic group best describes you?

New Zealand European (1)

New Zealand Maori (2)

Other European (3)

Pacific Islander (4)

Asian (5)

Other - Please State (6) _____

Q5 Are you a Taranaki resident?

Yes (1)

No (2)

Display This Question:

If Are you a Taranaki resident? = Yes

Q6 Please state the area where you are living

New Plymouth (1)

Stratford (2)

Eltham (3)

Hawera (4)

Inglewood (5)

Waitara (6)

Oakura (7)

Okato (8)

Opunake (9)

Manaia (10)

Patea (11)

Waverley (12)

Other - Please state (13) _____

Display This Question:

If Are you a Taranaki resident? = No

Q7 Please state the region you came from

- Auckland (1)
- Bay of Plenty (2)
- Canterbury (3)
- Gisborne (4)
- Hawke's Bay (5)
- Manawatu-Wanganui (6)
- Marlborough (7)
- Nelson (8)
- Northland (9)
- Otago (10)
- Southland (11)
- Tasman (12)
- Waikato (13)
- Wellington (14)
- West Coast (15)
- Overseas - Please state (16) _____

End of Block: Background data

Start of Block: Recreational use map and survey section

Q8 Have you visited any beaches, rivers or lakes in Taranaki in the past 12 months for reason other than to do with your work?

Yes (1)

No (2)

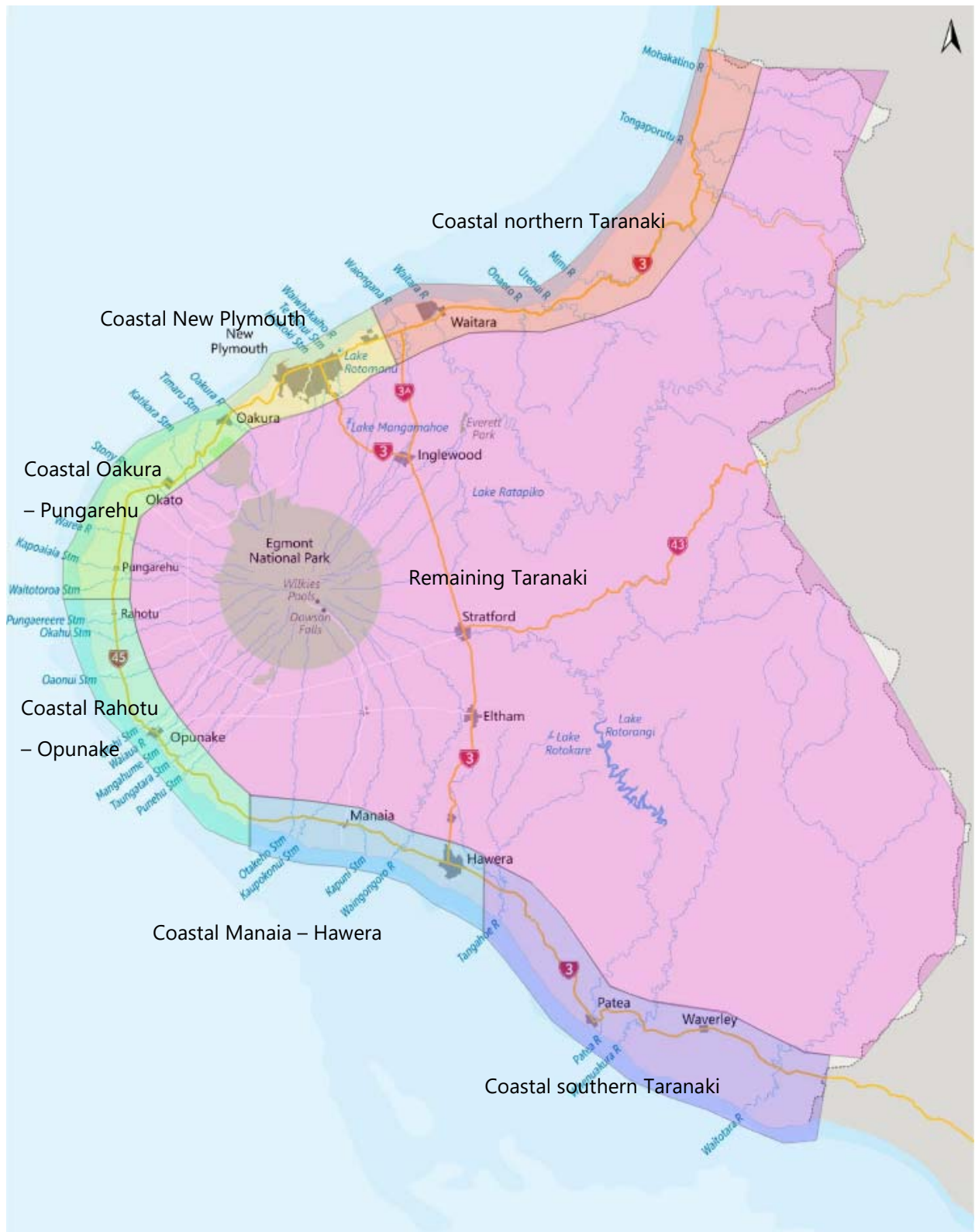
Skip To: Q24 If Have you visited any beaches, rivers or lakes in Taranaki in the past 12 months for reason other... = No

Display This Question:

If Have you visited any beaches, rivers or lakes in Taranaki in the past 12 months for reason other... = Yes

Q9 Please click on the map for areas you have visited in the past 12 months.

	Off (1)	On (2)
coastal northern Taranaki (265)		
coastal New Plymouth (266)		
coastal Oakura - Pungarehu (267)		
coastal Rahotu - Opunake (268)		
coastal Manaia - Hawera (269)		
coastal southern Taranaki (270)		
remaining Taranaki (271)		



Display This Question:

If Please click on the map for areas you have visited in the past 12 months. = coastal northern Taranaki [On]

Q10 You selected coastal northern Taranaki area. Please select the locations that you have visited (Sites not listed below can be added in the following question)

- Epiha Road Beach (21)
- Lake Cowley (19)
- Lake Nganana (18)
- Manutahi (20)
- Mimi River (3)
- Mohakatino River (1)
- Onaero Bay at Beach Settlement (9)
- Onaero Bay at Surf Club (22)
- Onaero River (6)
- Pukearuhe (White Cliffs) (15)
- Tongaporutu River (2)
- Urenui Beach (10)
- Urenui River (4)
- Wai-iti Beach (12)
- Waiongana River (17)
- Waitoetoe campsite (13)
- Waitara East Beach (8)
- Waitara West Beach (11)
- Waitara River at Town Wharf (7)

Display This Question:

If Please click on the map for areas you have visited in the past 12 months. = coastal New Plymouth [On]

Q11 You selected coastal New Plymouth area. Please select the locations that you have visited (Sites not listed below can be added in the following question)

- Back Beach at Herekawe Stream (19)
- Back Beach at Paritutu Rock (14)
- Barrett Domain (17)
- Bell Block Beach (1)
- Lee Breakwater (13)
- Centennial Drive (20)
- Coastal Walkway (2)
- East End Beach (3)
- Fitzroy Beach (4)
- Huatoki River (12)
- Kawaroa (18)
- Lake Rotomanu (10)
- Ngamotu Beach (11)
- Pukekura Park (15)
- Te Henui River mouth (9)
- Waiwhakaiho River at Audrey Gale Park (Merrilands Domain) (6)
- Waiwhakaiho River at Burgess Park (8)
- Waiwhakaiho River at meeting of the waters (7)
- Waiwhakaiho River at Rimu Street (Telecom) (22)

Waiwhakaiho River at Te Rewa Rewa Bridge (5)

Waiwhakaiho River at the mouth (16)

Page Break

Display This Question:

If Please click on the map for areas you have visited in the past 12 months. = coastal Oakura - Pungarehu [On]

Q12 You selected coastal Oakura - Pungarehu area. Please select the locations that you have visited (Sites not listed below can be added in the following question)

- Ahu Ahu Road (7)
- Cape Egmont (17)
- Corbett Park/Oakura River mouth (10)
- Greenwood Road (12)
- Komene Road (14)
- Kumara Patch (13)
- Oakura Beach at Surf Club (1)
- Oakura Beach at Camp Ground (11)
- Paora Road (6)
- Puniho Road (8)
- Stent Road (16)
- Stony River (4)
- Tapuae Beach (9)
- Timaru Stream (3)
- Weld Road (5)

Page Break

Display This Question:

If Please click on the map for areas you have visited in the past 12 months. = coastal Rahotu - Opunake [On]

Q13 You selected coastal Rahotu - Opunake area. Please select the locations that you have visited (Sites not listed below can be added in the following question)

- Arawhata Road Beach (9)
- Greenmeadows Beach (7)
- Kahui Stream (14)
- Kina Road (15)
- Lake Opunake (2)
- Mangahume Stream (10)
- Middleton Bay (4)
- Oaonui Stream (16)
- Opunake Beach (3)
- Puketapu Road (11)
- Rahotu (13)
- Waiaua River (1)

Page Break

Display This Question:

If Please click on the map for areas you have visited in the past 12 months. = coastal Manaia - Hawera [On]

Q14 You selected coastal Manaia - Hawera area. Please select the locations that you have visited (Sites not listed below can be added in the following question)

- Kapuni Stream (4)
- Kaupokonui River at Beach Domain (3)
- Manaia (5)
- Nowells Lake (8)
- Ohawe Beach (2)
- Otakeho Stream (6)
- Waihi Beach (7)
- Waingongoro River mouth (1)

Page Break

Display This Question:

If Please click on the map for areas you have visited in the past 12 months. = coastal southern Taranaki [On]

Q15 You selected coastal southern Taranaki area. Please select the locations that you have visited (Sites not listed below can be added in the following question)

- Mana Bay (10)
- Mokoia Road (7)
- Patea Beach (9)
- Patea River at boat ramp (1)
- Tangahoe River (8)
- Wai-inu Beach (2)
- Waipipi Beach (6)
- Waverley Beach (3)
- Whenuakura River (5)

Page Break

Display This Question:

If Please click on the map for areas you have visited in the past 12 months. = remaining Taranaki [On]

Q16 You selected the remaining Taranaki area. Please select the locations that you have visited (Sites not listed below can be added in the following question)

- Dawson Falls (1)
- Everett Park (5)
- Lake Mangamahoe (10)
- Lake Rotokare (6)
- Lake Ratapiko (7)
- Lake Rotorangi (12)
- Maketawa River (4)
- Manganui River (11)
- Ngatoro Stream (2)
- Normanby weir (15)
- Patea Dam (8)
- Patea River at Carrington Walkway (14)
- Patea River at King Edward Park (9)
- Waingongoro River at Eltham Presbyterian Camp (13)
- Wilkies Pools (3)

Page Break

Q17 Are there any locations that was not identified in the previous areas where you do recreational activities?

Yes (1)

No (3)

Display This Question:

If Are there any locations that was not identified in the previous areas where you do recreational a... = Yes

Q18 Please mark on the map below for locations that were not listed in the previous questions. (Note: if you accidentally marked the wrong spot on the map, click on the same spot to remove the dot)



Display This Question:

If Are there any locations that was not identified in the previous areas where you do recreational a... = Yes

Q19 Please name the locations that you marked on the map.

Q20 Please choose the one spot that you visited most frequently during the last 12 months.

Q21 For your answer above, what made you chose that location to visit?

Rank your 3 most important reasons where 1=main reason, 2=second reason, 3=third reason.

Rank

Close to home

Ease of access

Good facilities

Doesn't cost much to get there

Visual appeal

Natural character

Variety of things to do

Suitable for children

Good for recreational activities

Not crowded

Peace and quiet

Water is clean and healthy

Other – Please state

Q22 For the sites you have visited in the last 12 months please tick the activities you undertook while visiting the area.

	Beach (1)	River (2)	Lake (6)
Walking (Q22_1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jogging (Q22_2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cycling (Q22_3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swimming (Q22_4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surfing (Q22_5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wind surfing (Q22_6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kite surfing (Q22_7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Paddle boarding (Q22_8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kayaking/Canoeing (Q22_9)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Snorkeling/Diving (Q22_10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sailing (Q22_11)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water skiing (Q22_12)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rafting (Q22_13)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boating (Q22_14)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Jet skiing (Q22_15)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Waka Ama (Q22_16)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fishing (Q22_17)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whitebaiting (Q22_18)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shellfish gathering (Q22_19)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Picnic/BBQ (Q22_20)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Camping (Q22_21)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Horse riding (Q22_22)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hunting (Q22_23)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relaxing (Q22_24)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scenic appreciation (Q22_25)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Watching other people's recreation (Q22_26)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Driving for pleasure (Q22_27)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other - Please state (Q22_28)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q23 From the answers selected above, please choose the **main** activity for visiting the area

	Activity
Beach	Select from dropdown options
River	Select from dropdown options
Lake	Select from dropdown options

Q24 On approximately how many days of the year would you visit these areas in Taranaki:

	Days
Beach	
River	
Lake	

Q25 What time of the year do you usually visit these areas?

- Summer (1)
 - Autumn (2)
 - Winter (3)
 - Spring (4)
 - All year round (5)
-

Q26 Do you visit beaches, rivers and lakes as often as you would like?

Yes (1)

No (2)

Display This Question:

If Do you visit beaches, rivers and lakes as often as you would like? = No

Q27 Which of the following reasons best explains why not? Please rank in order of importance
1=main reason, 2=second reason, 3=third reason

____ Takes too long to get there (1)

____ Costs too much (petrol) (2)

____ Work commitments (3)

____ Family commitments (4)

____ Lack of transport (5)

____ Other reasons - Please state (6)

End of Block: Recreational use map and survey section

Start of Block: Public access section

Q28 Within the last 12 months have you been able to gain access to rivers, lakes or parts of the coast in Taranaki that you wanted to have access to:

Yes (1)

No (2)

Display This Question:

If Within the last 12 months have you been able to gain access to rivers, lakes or parts of the coas... = No

Q29 What was the main reason or reasons why you have not been able to gain access?

- Landowner or occupier denied access across their land (1)
 - Entrance or access closed (2)
 - Access was too difficult e.g. no road, track or bridge, steep topography etc. (3)
 - Not aware of any access to the site (4)
 - Other reason (5) _____
-

Q30 Do you think the level of public access to Taranaki's rivers, lakes and the coast is

- Excellent (1)
 - Good (4)
 - Fair (5)
 - Poor (2)
-

Q30a Comment (optional)

End of Block: Public access section

Start of Block: Water quality section

Q31 How would you rate the overall water quality of Taranaki's beaches, rivers and lakes:

	Excellent (1)	Good (2)	Fair (3)	Poor (4)
Beaches (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rivers (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lakes (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q32 Do you/have you checked the conditions of the site before visiting?

- Yes (1)
- Sometimes (4)
- No, just wing it (2)

Skip To: Q35 If Do you/have you checked the conditions of the site before visiting? = No, just wing it

Q33 What information do you look up before visiting the site?

- Access to the site (1)
 - Weather conditions (2)
 - Tide times (7)
 - Swell / Surf conditions (3)
 - Water quality conditions / warning (4)
 - Civil defense/ emergency alert warning (5)
 - Other - Please state (6) _____
-

Q34 How do you go about finding information of the site before visiting?

- Check the district council website (1)
 - Check the district health board website (3)
 - Check the regional council website (5)
 - Check the LAWA (Land Air Water Aotearoa) website (7)
 - Check the Metservice website (8)
 - Go directly to the 'Surfwatch' web page (11)
 - Just Google it (9)
 - Other - Please state (10) _____
-

Q35 Would you still **visit** a site if a warning sign is up? E.g. sign stating the access is closed or a health warning or no swimming sign.

- Yes (4)
 - Sometimes (5)
 - No (6)
-

Q36 Would you still do **recreational water-based activities**, e.g. swimming, surfing, kayaking, fishing, shellfish gathering if the warning signs indicated water quality conditions were over the guideline limit?

- Yes (1)
- Maybe (4)
- No (3)

Skip To: End of Survey If Would you still do recreational water-based activities, e.g. swimming, surfing, kayaking, fishing... = No

Display This Question:

If Would you still do recreational water-based activities, e.g. swimming, surfing, kayaking, fishing... = Yes

Q37 Why would you still visit the site if the water quality warning sign is up?

- Did not notice the water quality warning signs (5)
- Familiarity and knowledge of the site (7)
- It depends on who is involved in the activities (e.g. I might not go ahead if it involved my children) (10)
- Not worried about the risk of being sick / getting infected (6)
- The activities for the day had already been planned (3)
- The conditions were great for recreational activity e.g. kite surfing, surfing, kayaking (4)
- To cool off on a hot day (1)
- Other - Please state (2) _____

Display This Question:

If Would you still do recreational water-based activities, e.g. swimming, surfing, kayaking, fishing... = Maybe

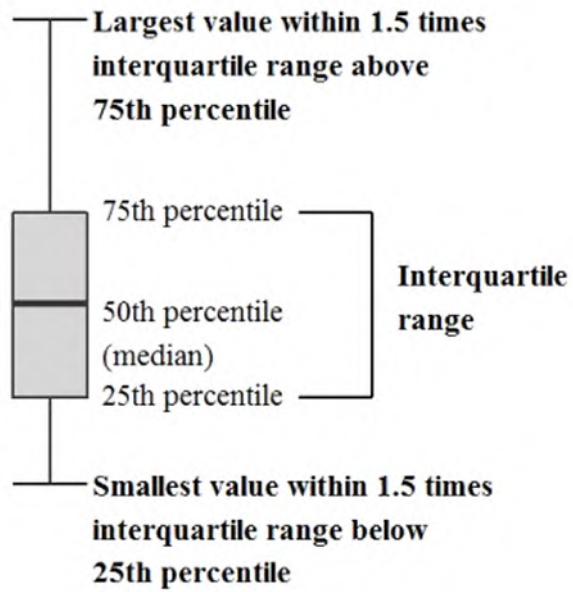
Q38 Why would you still visit the site if the water quality warning sign is up?

- Did not notice the water quality warning signs (5)
- Familiarity and knowledge of the site (8)
- It depends on who is involved in the activities (e.g. I might not go ahead if it involved my children) (7)
- Not worried about the risk of being sick / getting infected (6)
- The conditions were great for recreational activity e.g. kite surfing, surfing, kayaking (4)
- The activities for the day had already been planned (3)
- To cool off on a hot day (1)
- Other - Please state (2) _____

End of Block: Water quality section

Appendix II

How to interpret a boxplot



- **Outside value**-Value is >1.5 times and <3 times the interquartile range beyond either end of the box

Appendix III

Ranking of all sites visited within the last year
by questionnaire respondents

Site	Number of Respondents who had visited
Coastal Walkway	353
Fitzroy Beach	352
Pukekura Park	338
East End Beach	336
Ngamotu Beach	313
Te Henui River mouth	265
Waiwhakaiho River at Te Rewa Rewa Bridge	257
Back Beach at Paritutu Rock	234
Waiwhakaiho River at the mouth	225
Lake Rotomanu	219
Back Beach at Herekawe Stream	202
Oakura Beach at Surf Club	195
Lake Mangamahoe	188
Lee Breakwater	184
Waiwhakaiho River, Merrilands Domain	178
Urenui Beach	167
Opunake Beach	163
Huatoki River	155
Kawaroa	154
Dawson Falls	143
Corbett Park/Oakura River mouth	141
Ahu Ahu Road	139
Waiwhakaiho River at meeting of the waters	136
Wai-iti Beach	133
Bell Block Beach	130
Oakura Beach at Camp Ground	128
Urenui River	126
Weld Road	125
Lake Rotokare	115
Wilkie Pools	115
Barrett Domain	112
Waitara River at Town Wharf	108
Waitara West Beach	106
Stony River	101
Cape Egmont	99
Tongaporutu River	98
Pukearuhe (White Cliffs)	96
Waiwhakaiho River at Burgess Park	96
Onaero Bay at Beach Settlement	94

Waiwhakaiho River at Rimu Street (Telecom)	90
Centennial Drive	89
Onaero River	87
Waitara East Beach	86
Everett Park	82
Ohawe Beach	80
Lake Rotorangi	78
Onaero Bay at Surf Club	78
Stent Road	74
Tapuae Beach	68
Kaupokonui River at Beach Domain	64
Puniho Road	61
Lake Opunake	58
Lake Ratapiko	57
Waihi Beach	54
Patea Beach	52
Waiongana River	51
Patea River at King Edward Park	50
Rahotu	48
Kina Road	46
Middleton Bay	46
Patea Dam	45
Patea River at boat ramp	45
Timaru Stream	43
Komene Road	39
Arawhata Road Beach	37
Epiha Road Beach	37
Mimi River	37
Paora Road	37
Waverley Beach	36
Manaia	35
Kumara Patch	34
Greenwood Road	33
Waingongoro River mouth	33
Mohakatino River	31
Patea River at Carrington Walkway	28
Manganui River	26
Waitoetoe campsite	25
Waipipi Beach	22
Oaonui Stream	19
Wai-inu Beach	19
Mana Bay	17
Manutahi	17
Waiaua River	17

Whenuakura River	17
Normanby weir	16
Mangahume Stream	15
Tangahoe River	15
Greenmeadows Beach	14
Ngatoro Stream	14
Kapuni Stream	13
Waingongoro River at Eltham Camp	13
Maketawa River	12
Mokoia Road	12
Nowells Lake	12
Puketapu Road	12
Waiwhakaio River (other sites)	11
Mt Taranaki	10
Kahui Stream	9
Waitara River	8
Te Henui	7
Tupare	5
Lake Cowley	4
Lake Nganana	3
Pukeiti	3
Ratapihipihi	3
York Rd	3
Otakeho Stream	2
Blue Rata Reserve	2
Cardiff Walkway	2
Lucy's Gully	2
Manawapou River	2
Ahukawakawa	1
Bertrand Rd	1
Fort St George	1
Hickford Park	1
Hollard Gardens	1
Kaihihi River	1
Kaitake Range	1
Kapoaiaia Stream	1
Kohi Rd	1
Makuri	1
Manado Rd	1
Mangakotukutuku Falls	1
Mangaoraka Stream	1
Mangati Stream	1
Manihi Beach	1
Matemateonga	1

Moeawatea	1
Oakura Hall	1
Okato Domain	1
Omoana	1
Pitone Rd	1
Porikapa	1
Purangi	1
Tarata Domain	1
Toko	1
Tuna	1
Turuturumokai	1
Upper Egmont Rd	1
Uriti Rd	1
Waverley River	1
White Cliffs	1

Appendix IV

Site usage on weekdays vs weekends
from observational count

Table 1 Summary of user numbers counted at monitored sites, categorized by site type. Land, Swim and Water refer to the mean number of people observed on the bank/beach, swimming in the water, or taking part in water based activities, respectively. Peak gives the maximum number of people counted at the site at one time, while N denotes the number of observational counts undertaken at the site.

Site	Weekdays						Weekends					
	Total	Land	Swim	Water	Peak	n	Total	Land	Swim	Water	Peak	n
BEACHES												
Coastal Walkway	59	58	0	0	89	3	59	59	0	0	88	3
Tongaporutu	55	50	1	3	131	6	102	91	3	7	347	11
Fitzroy	53	31	10	12	164	4	92	53	26	13	262	4
Ngamotu	47	35	4	8	99	4	104	68	24	13	312	4
Oakura Beach	36	24	5	8	105	4	114	74	23	16	473	4
Opunake Beach	28	18	7	4	99	3	34	22	10	3	100	4
Back Beach	18	12	2	3	33	4	56	24	8	24	118	4
East End	16	13	3	1	41	4	38	24	9	6	99	4
Lee Breakwater	15	4	0	11	30	4	31	9	0	22	152	4
Waitara West	12	4	0	7	28	4	23	12	1	10	75	4
Mana Bay	11	7	0	3	26	4	15	13	1	2	37	4
Waiinu	9	8	0	0	40	4	24	22	1	1	60	4
Ohawe Beach	9	7	1	1	26	3	14	9	2	3	37	4
Onaero Surf Club	6	4	1	1	39	4	9	5	2	1	26	4
Wai-iti	5	4	0	1	25	4	22	15	1	6	63	4
Bell Block	5	5	0	0	12	4	8	6	1	1	23	4
Waverley	5	4	0	0	16	4	6	6	0	1	20	4
Stent Rd	5	4	0	2	29	3	2	1	0	1	7	4
Urenui Beach	4	2	1	0	18	4	8	6	1	1	23	4
Onaero Settlement	1	1	0	0	8	4	5	2	1	2	18	4
LAKES												
L. Rotomanu	18	13	2	2	53	4	26	18	3	5	46	4
Patea Dam	16	12	2	2	47	4	15	9	4	3	30	3
Pukekura Park	14	14	0	0	31	2	23	22	0	1	68	3
L. Opunake	4	4	0	0	12	3	3	3	0	0	8	4
L. Ratapiko	3	3	0	0	20	4	28	22	3	3	67	4
L. Rotokare	3	3	0	0	9	4	19	17	0	2	54	4
L. Mangamahoe	2	2	0	0	9	3	6	6	0	0	27	4
L. Rotorangi	2	0	2	0	8	4	5	3	0	2	22	4
Barrett Domain	2	2	0	0	6	4	2	2	0	0	7	4
L. Ngangana	1	1	0	0	3	4	3	2	0	1	15	4
RIVERS												
Merrilands Domain	25	15	10	0	55	3	34	24	10	0	85	4
Meeting of the Waters	15	8	7	1	46	3	9	4	4	0	28	4
Corbett Park	14	10	4	0	40	4	44	22	20	2	219	4
Timaru Stream	10	6	1	3	31	4	40	16	13	11	84	4
Kaupokonui R.	9	7	1	2	22	3	10	7	2	1	28	4

	Weekdays						Weekends					
Te Henui	8	8	0	0	29	4	14	9	5	1	41	4
Urenui River	8	5	2	1	42	4	20	13	4	4	92	4
Waiwhakaiho @ mouth	5	2	0	2	19	4	4	2	0	2	11	4
Waitara @ wharf	4	2	2	0	27	4	4	2	2	0	21	4
Patea River	3	2	1	1	12	4	5	4	0	1	19	4
Waingongoro @ Ohawe	3	2	0	0	8	3	4	3	1	0	11	4
Waitara @ mouth	2	1	0	1	9	4	13	6	0	8	56	4
Everett Park	1	1	0	0	3	3	3	1	2	0	14	4
Oaonui Stream	1	1	0	0	6	3	5	2	0	2	16	4
Stony River	1	1	0	0	9	3	0	0	0	0	0	4
Waingongoro @ Eltham	0	0	0	0	2	4	0	0	0	0	0	4

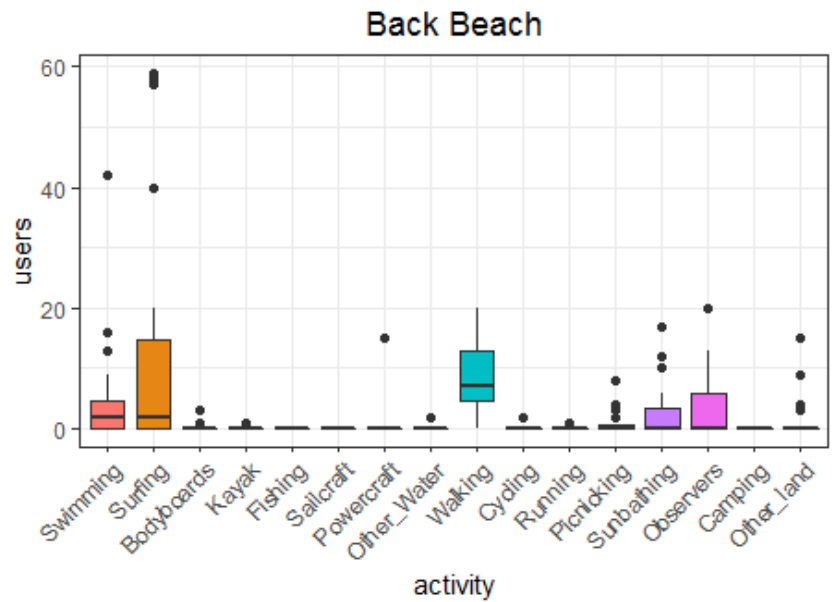
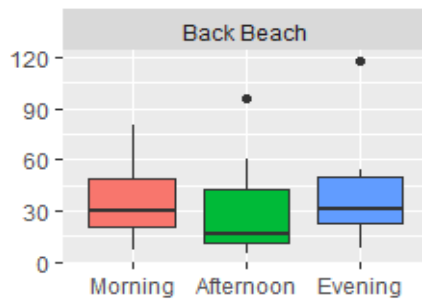
Appendix V

Individual site summaries from
observational count results

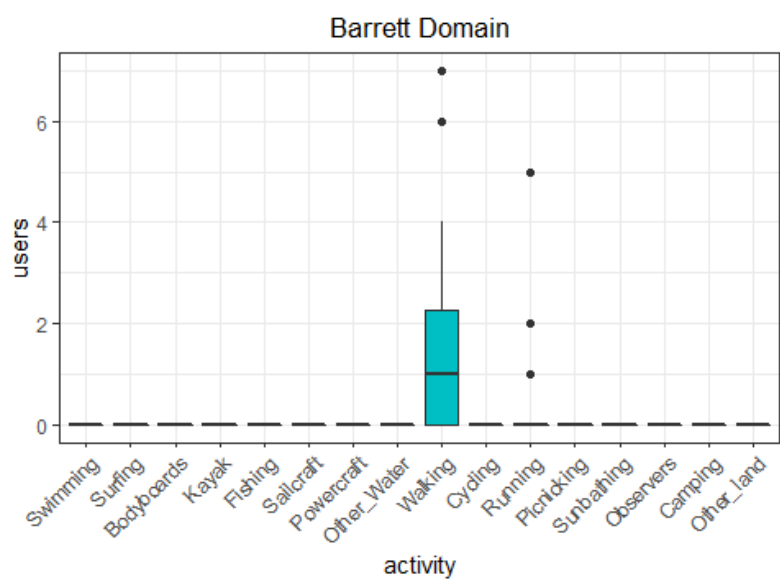
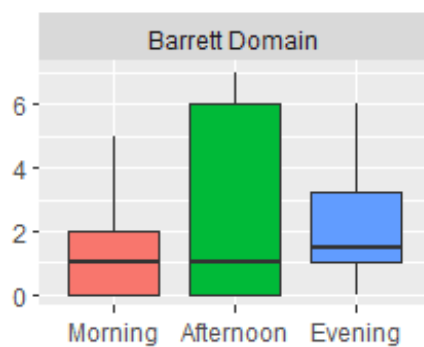
For each site, a boxplots comparing usage of the site at different times of day, and the activities undertaken by people at the site, are given.

New Plymouth District

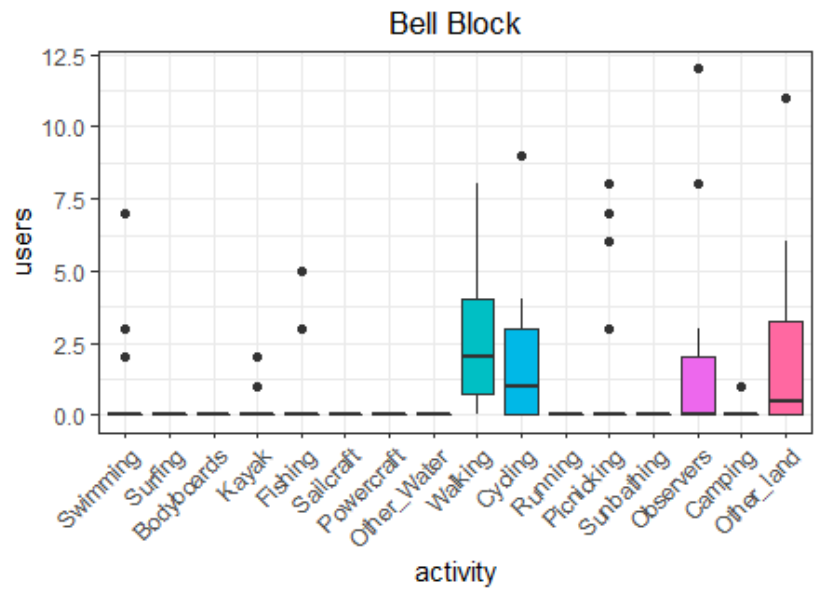
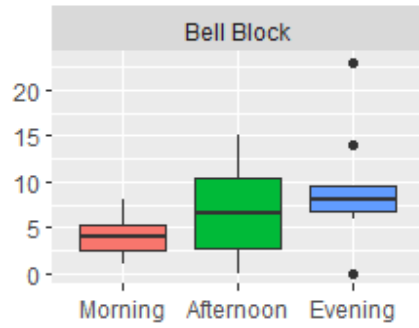
Back Beach (at Herekawe Stream)



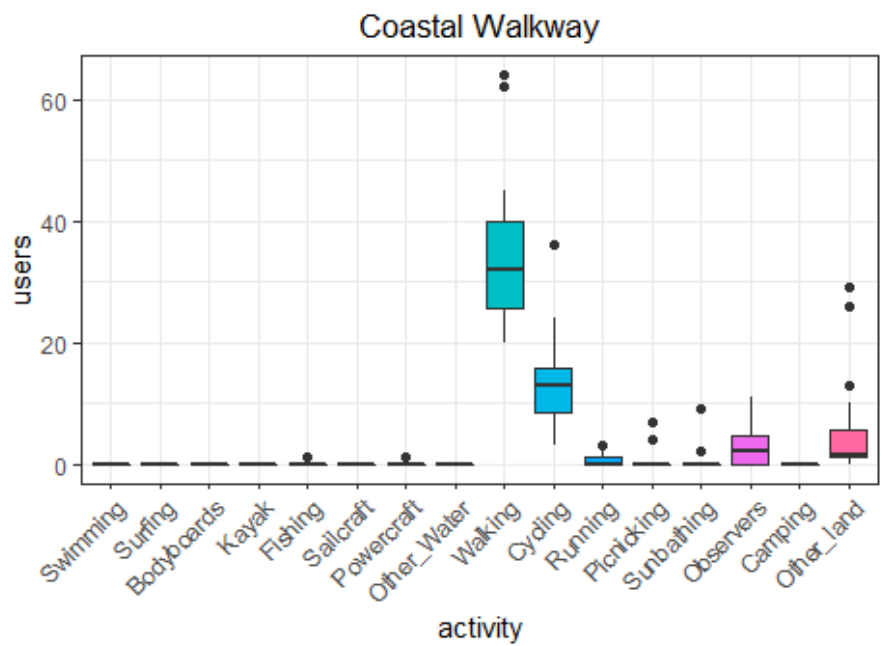
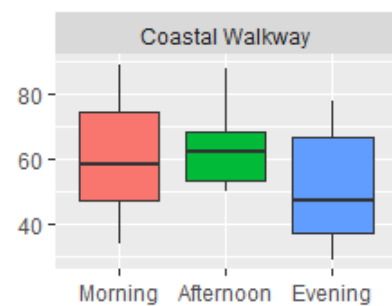
Barrett (Rotokare) Domain (at Roto St)



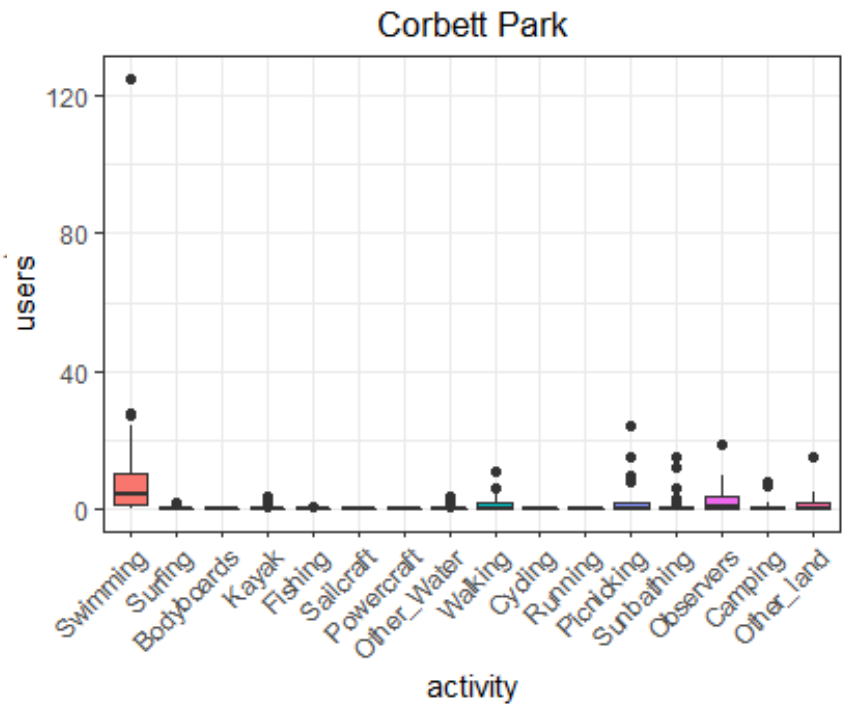
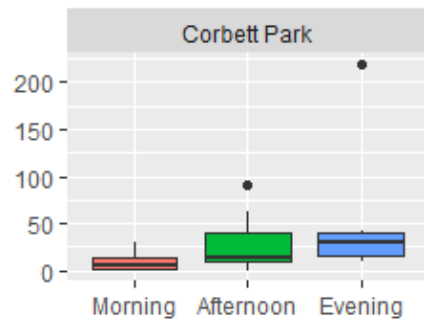
Bell Block Beach (at Mangati Rd)



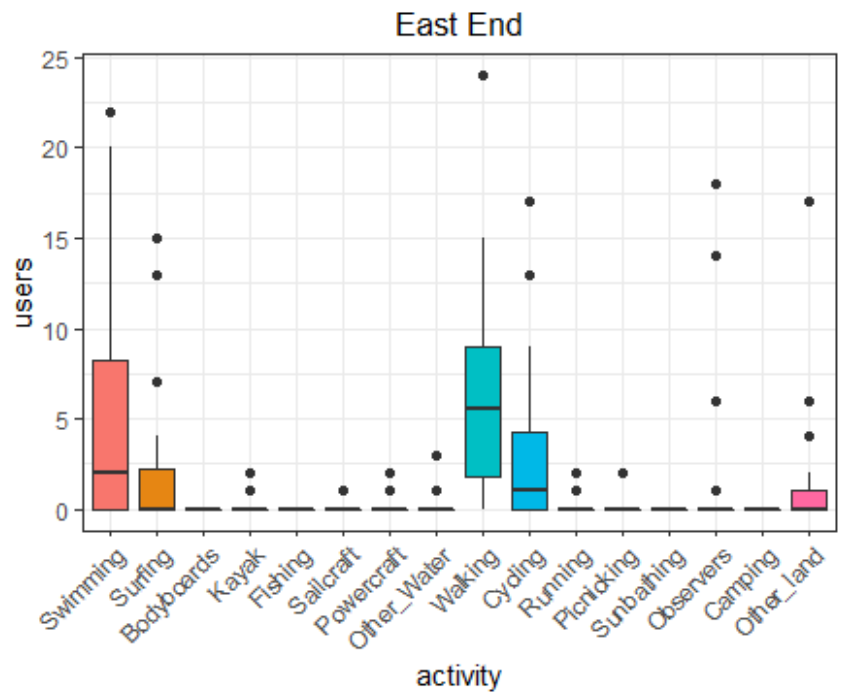
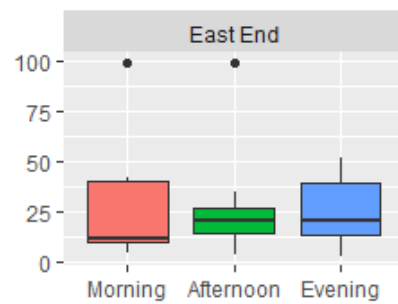
Coastal Walkway (at Wind-wand)



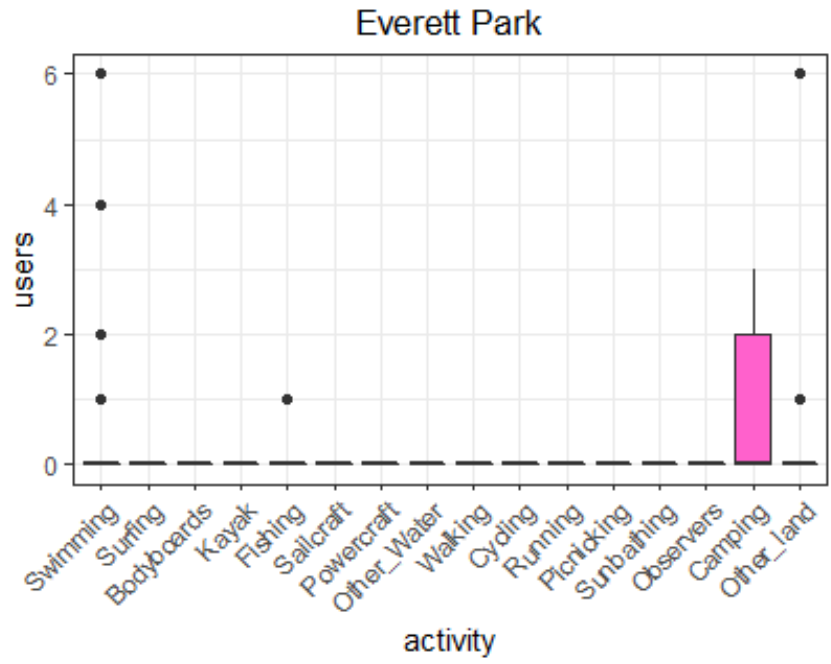
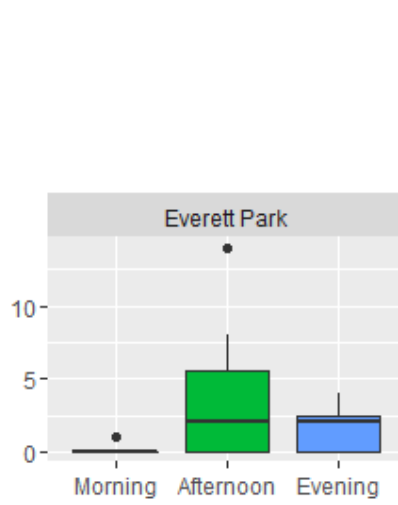
Corbett Park, Oakura River



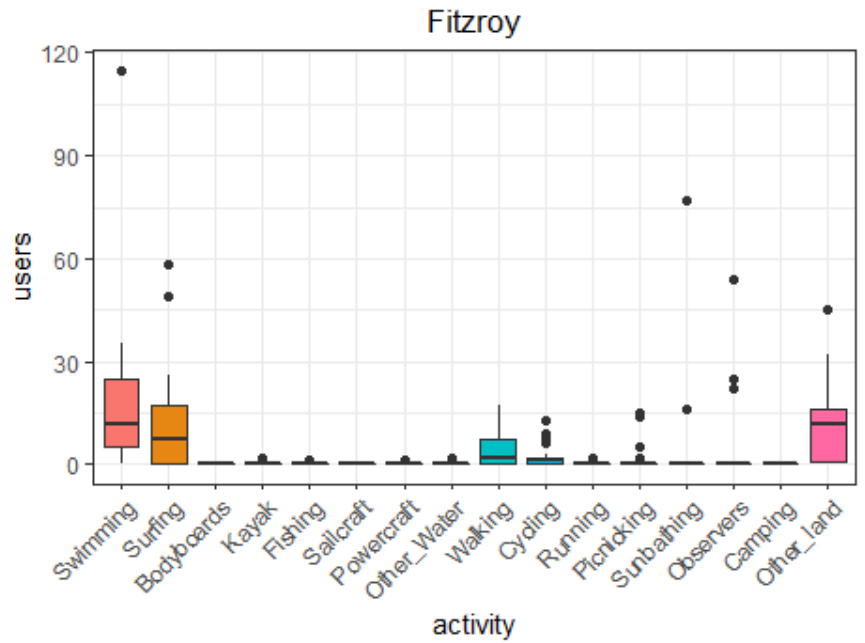
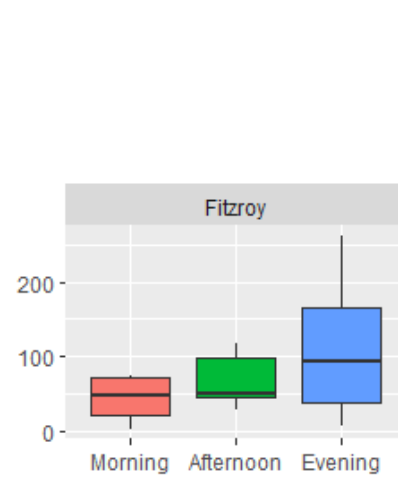
East End Beach (at Surfclub)



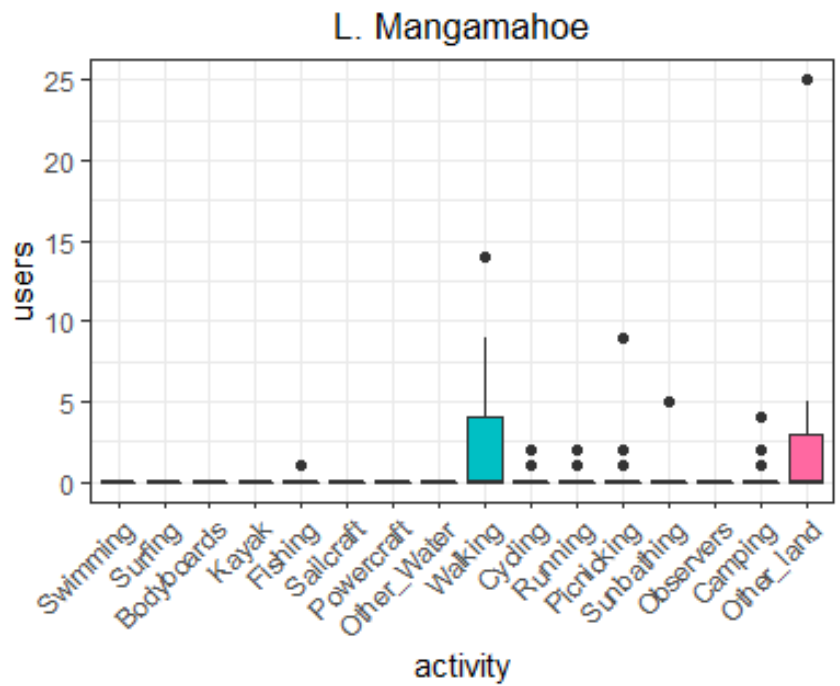
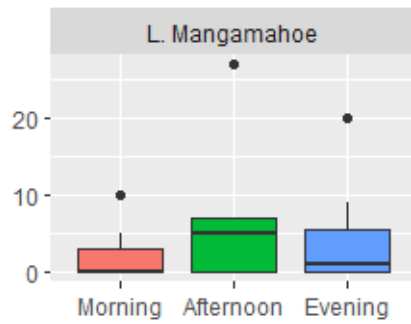
Everett Park (Manhanui River)



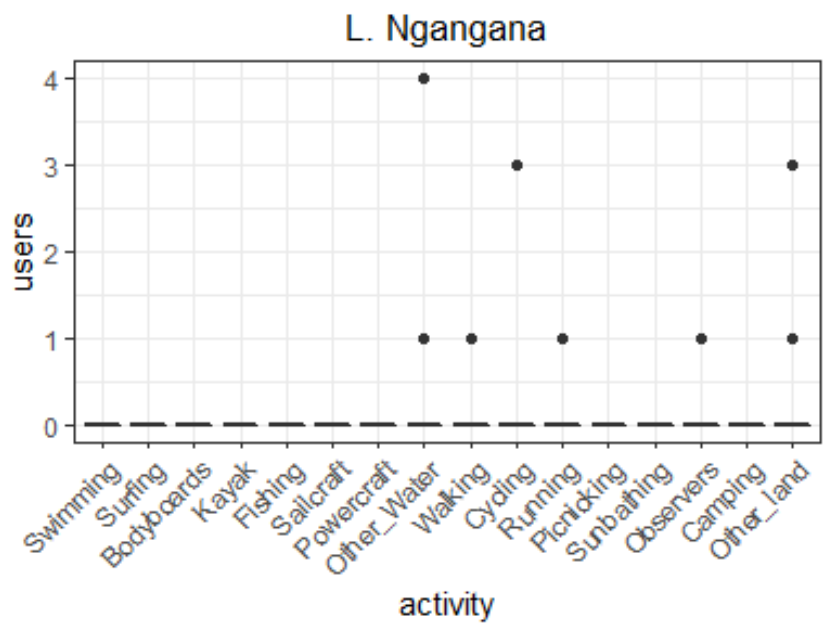
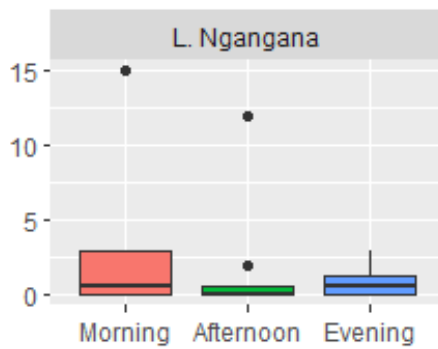
Fitzroy Beach (at Surfclub)



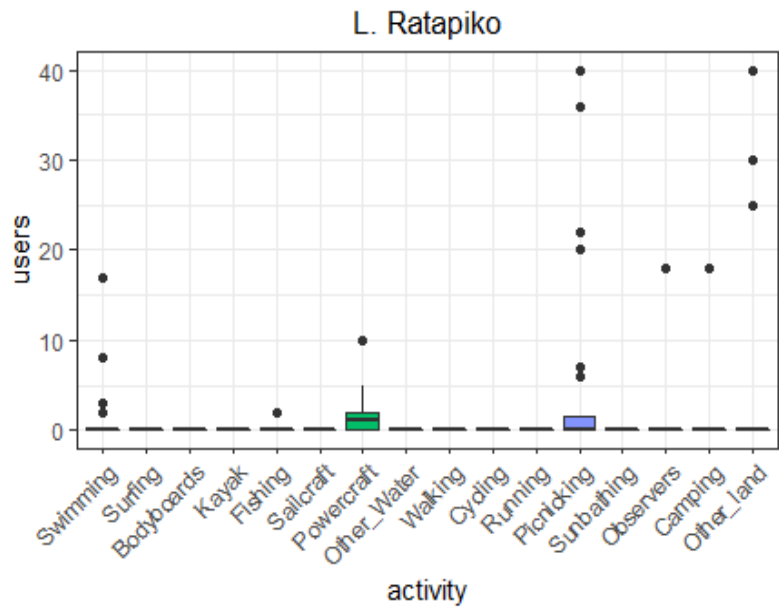
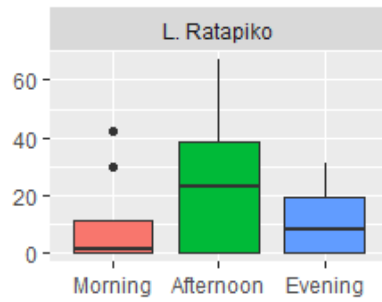
Lake Mangamahoe



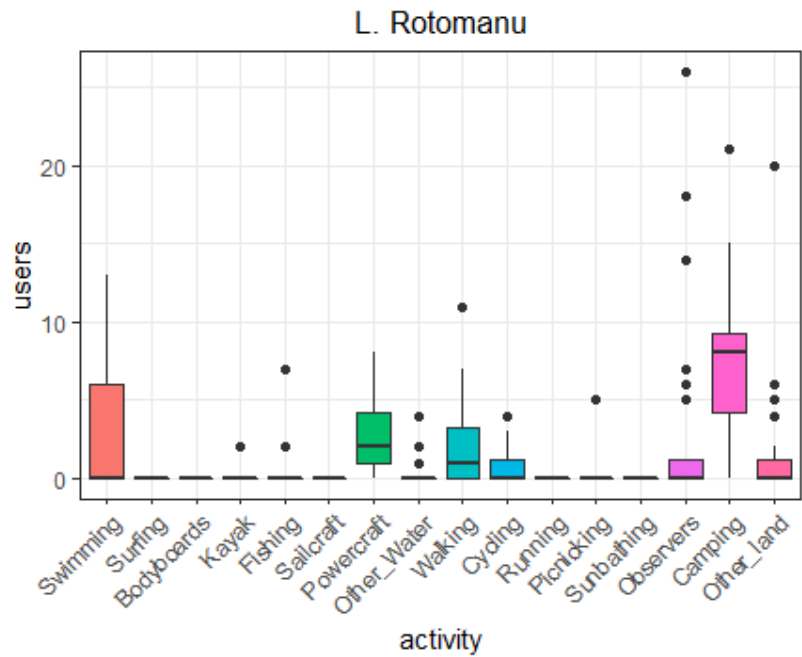
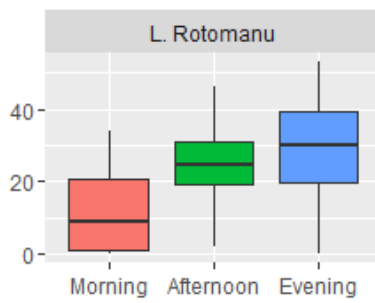
Lake Ngangana



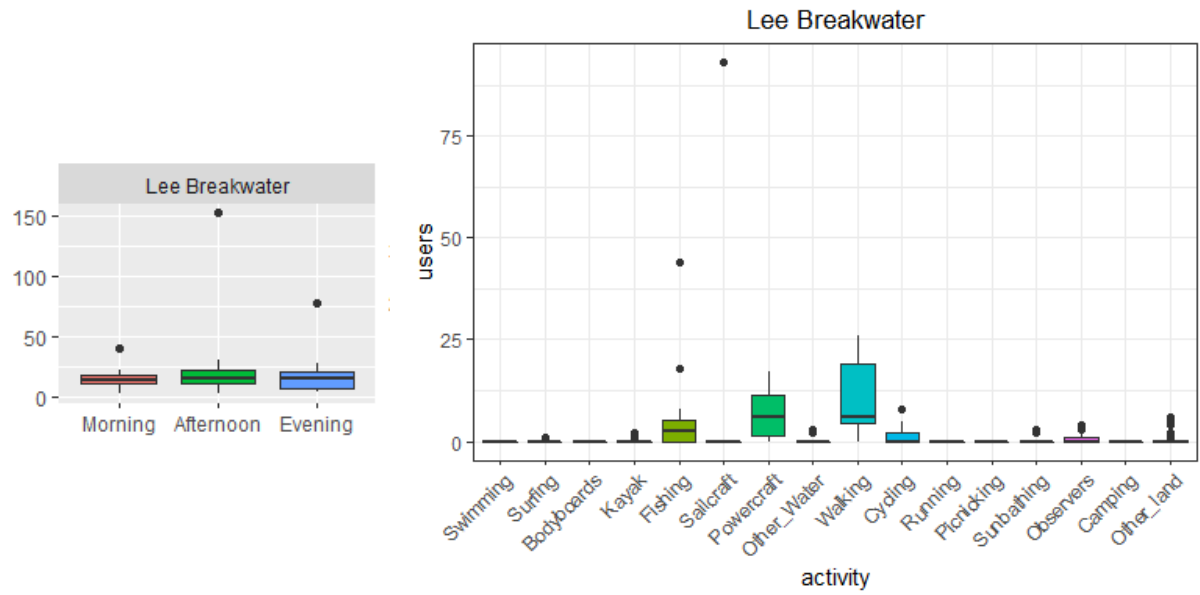
Lake Ratapiko



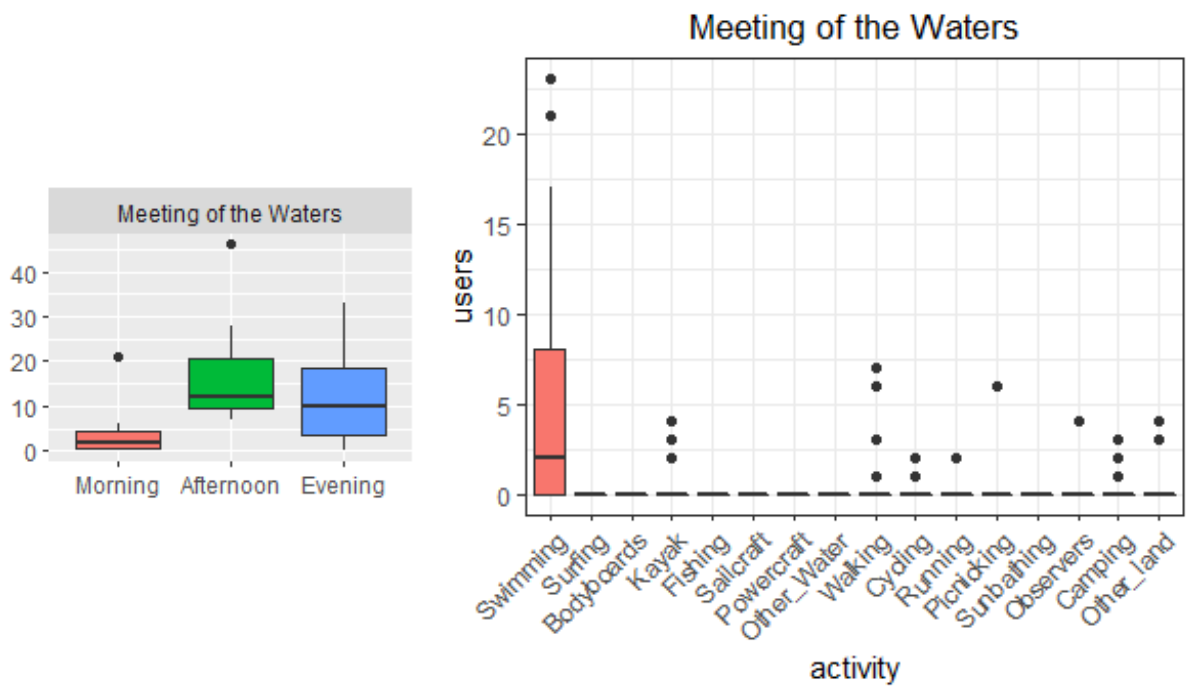
Lake Rotomanu



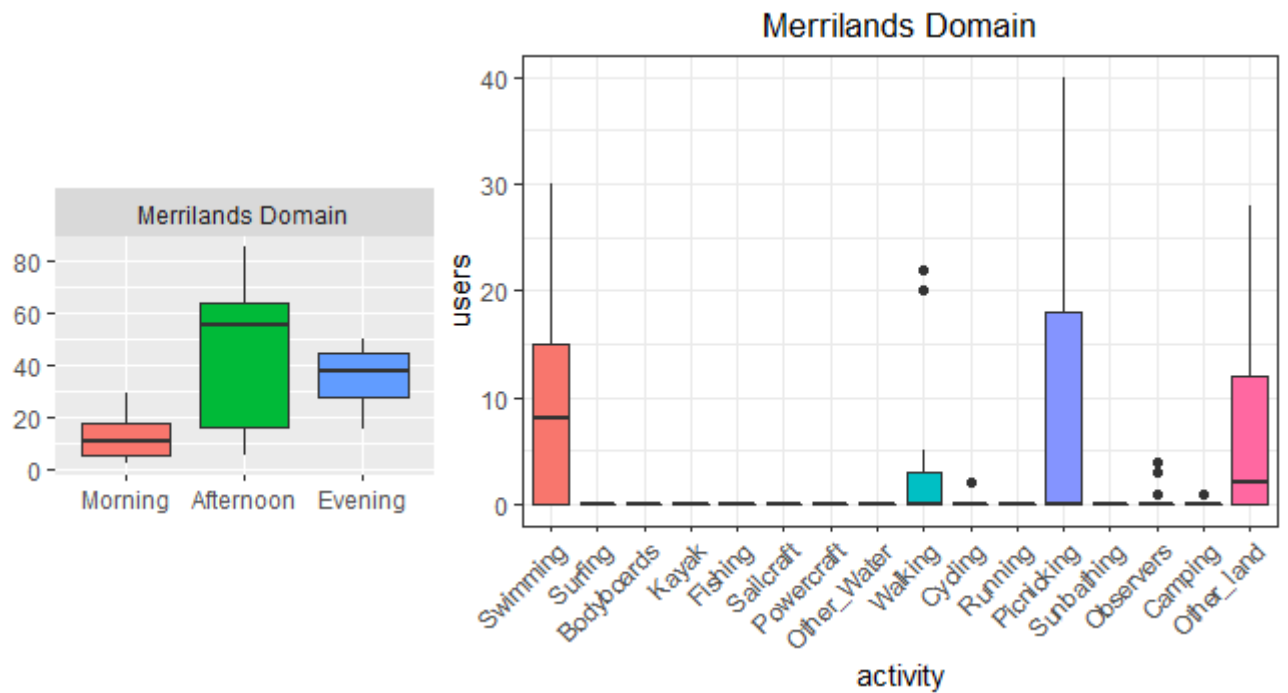
Lee Breakwater



Meeting of the Waters (Waiwhakaiho River)

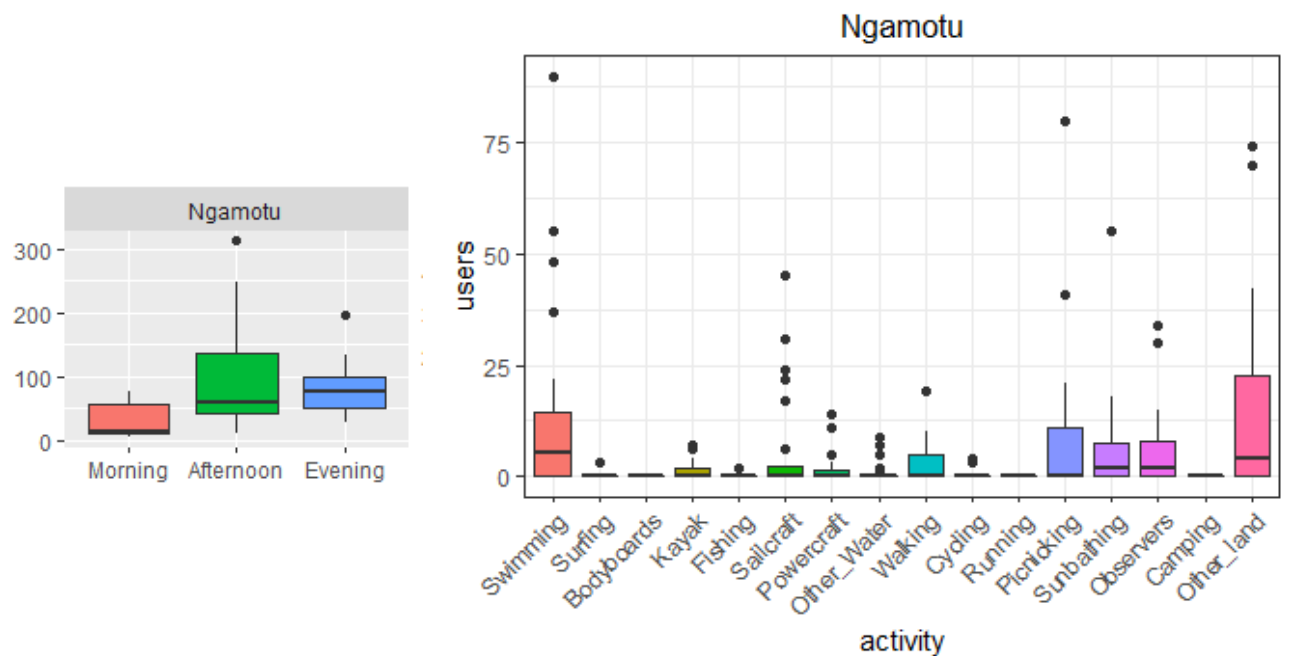


Merrilands Domain (Waiwhakaiho River)



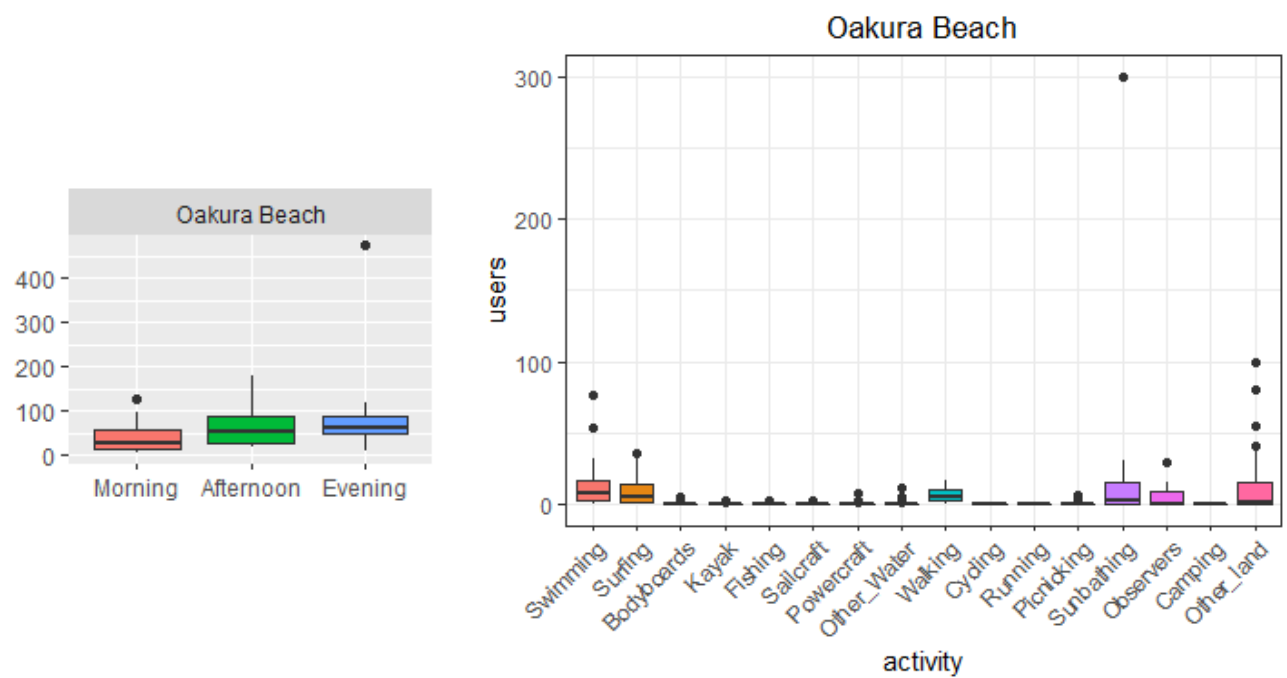
Note: "Other land" activities include playing frisbee golf, and people hanging out by cars.

Ngamotu Beach



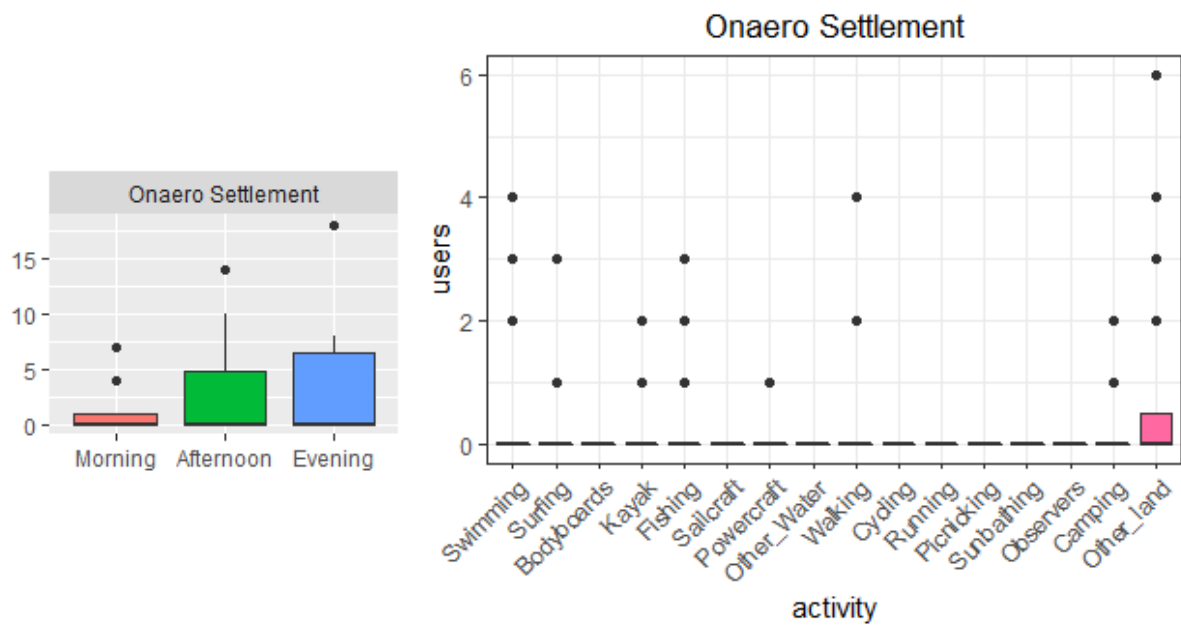
Note: Other land activities include people on the playground, sailing club members and others preparing boats, people playing on the beach and people sitting in cars.

Oakura Beach (at Surfclub)



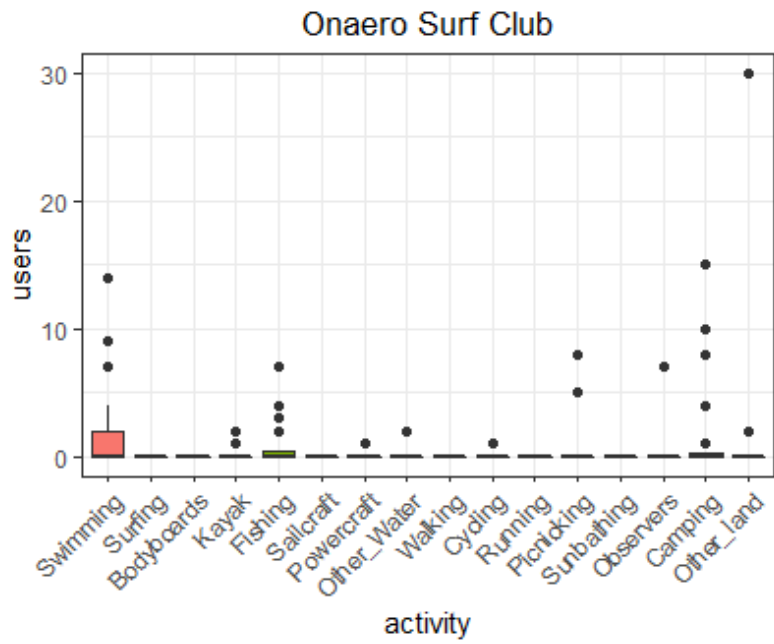
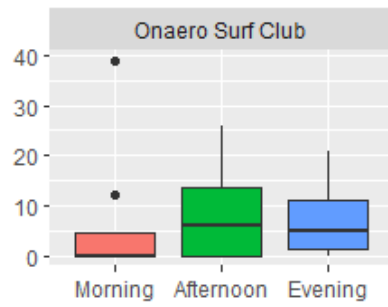
Other land activities include playing games on the beach, surf lifesaving, and people sitting in cars.

Onaero Bay (from settlement)

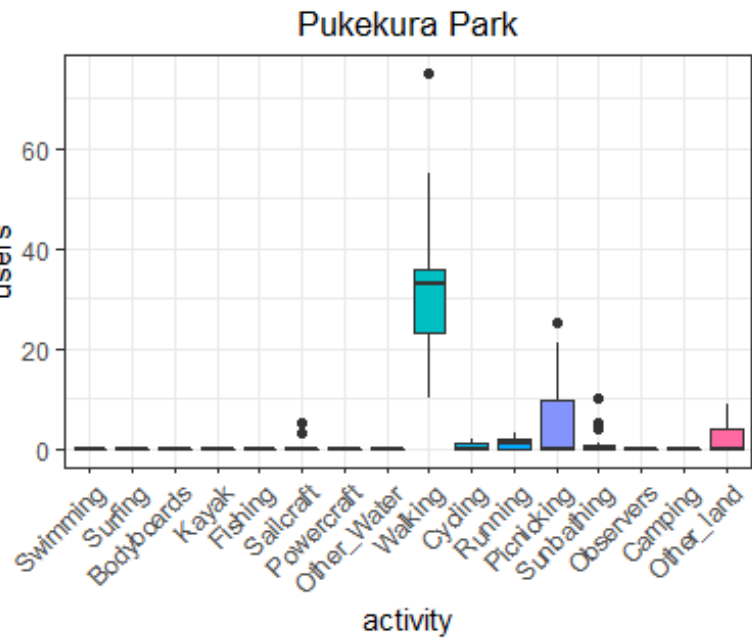
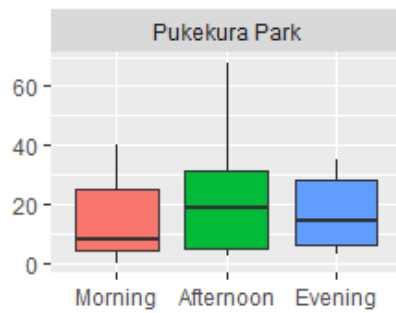


Other land activities were predominantly people sitting in cars.

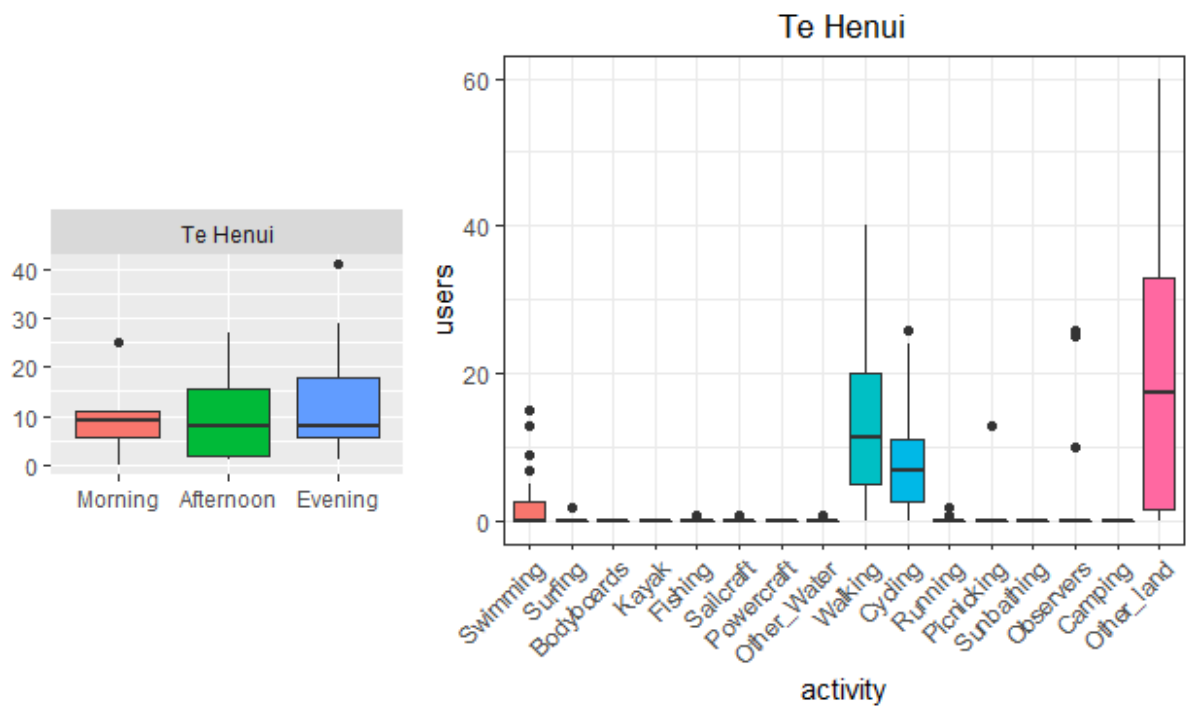
Onaero Beach (at Surfclub)



Pukekura Park Lake (at Teahouse)

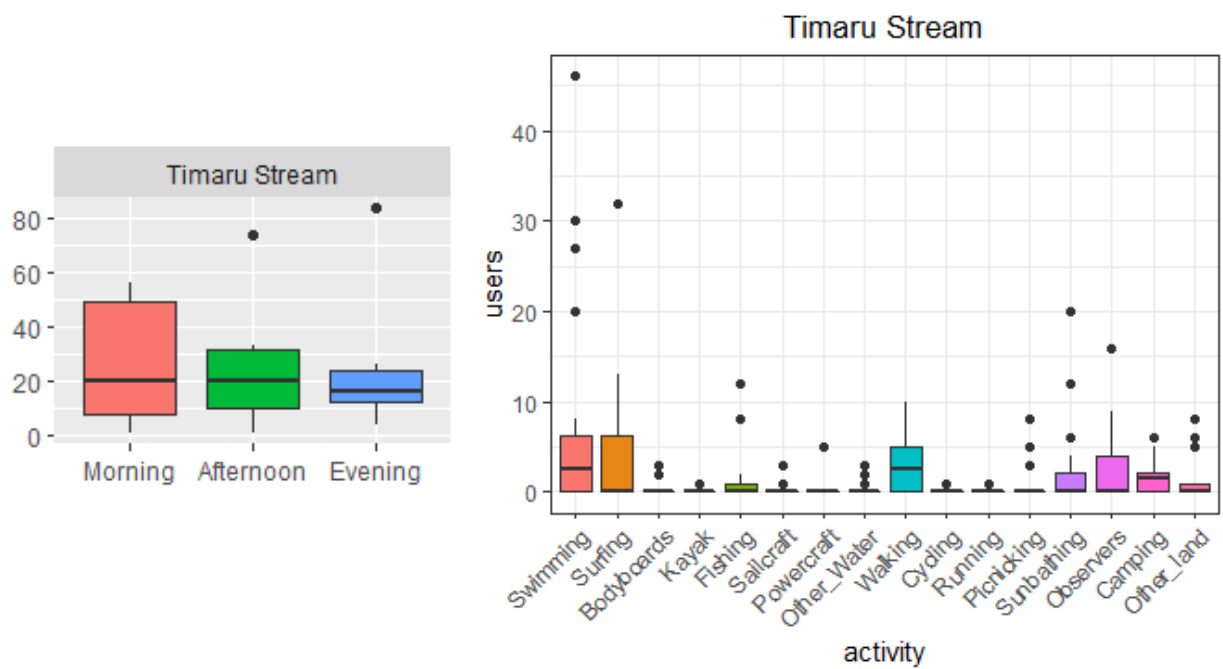


Te Henui Stream (at mouth)

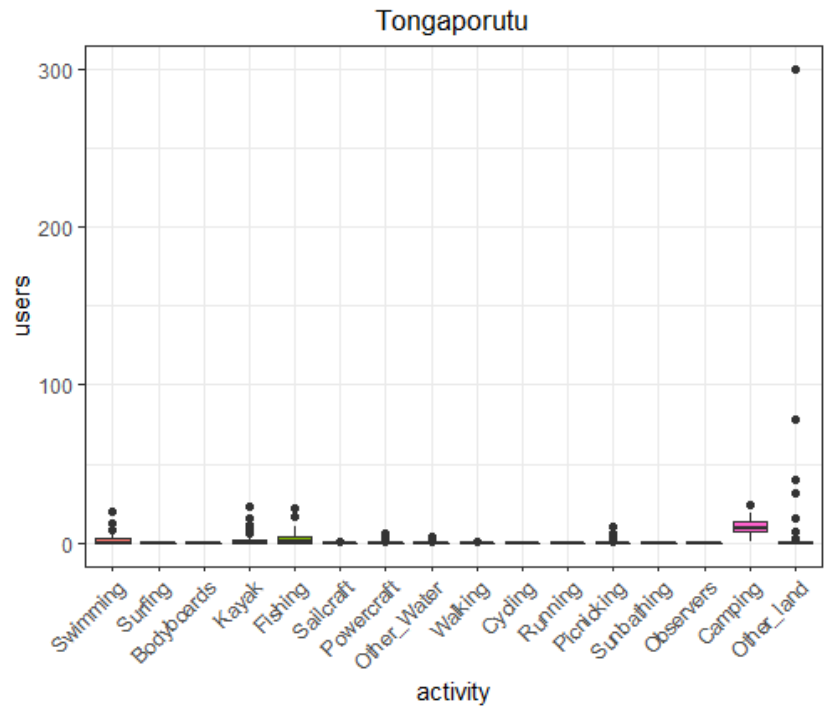
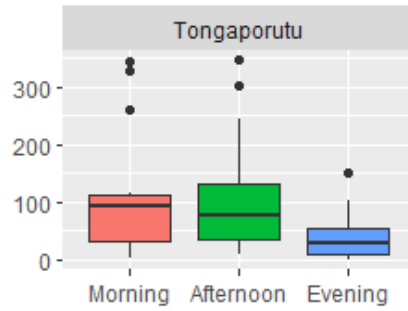


Other activities mainly include café users, with a small number of scooters and skateboarders.

Timaru Stream (Weld Rd Carpark)

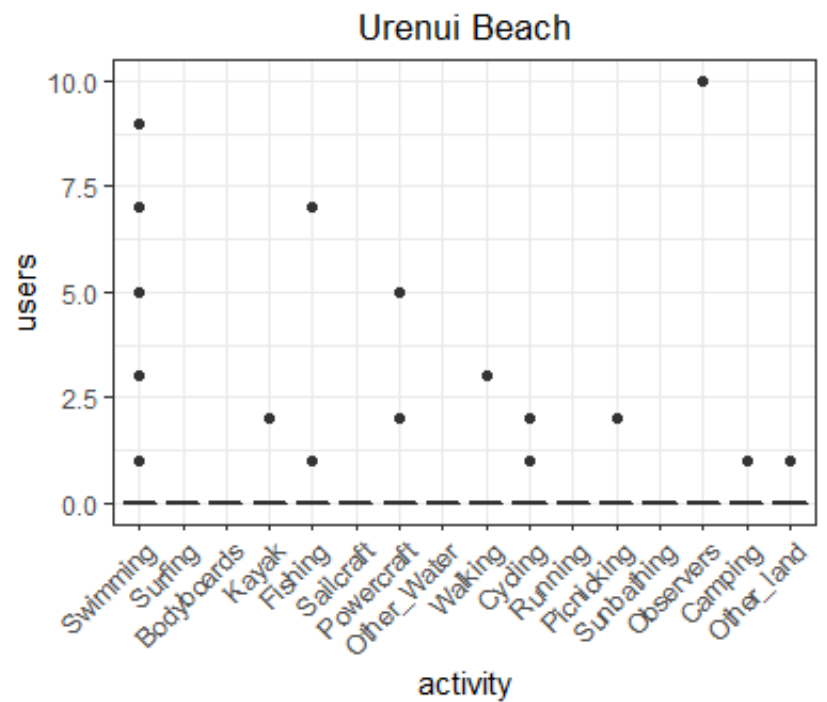
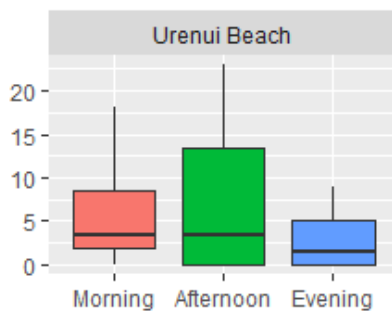


Tongaporutu Beach

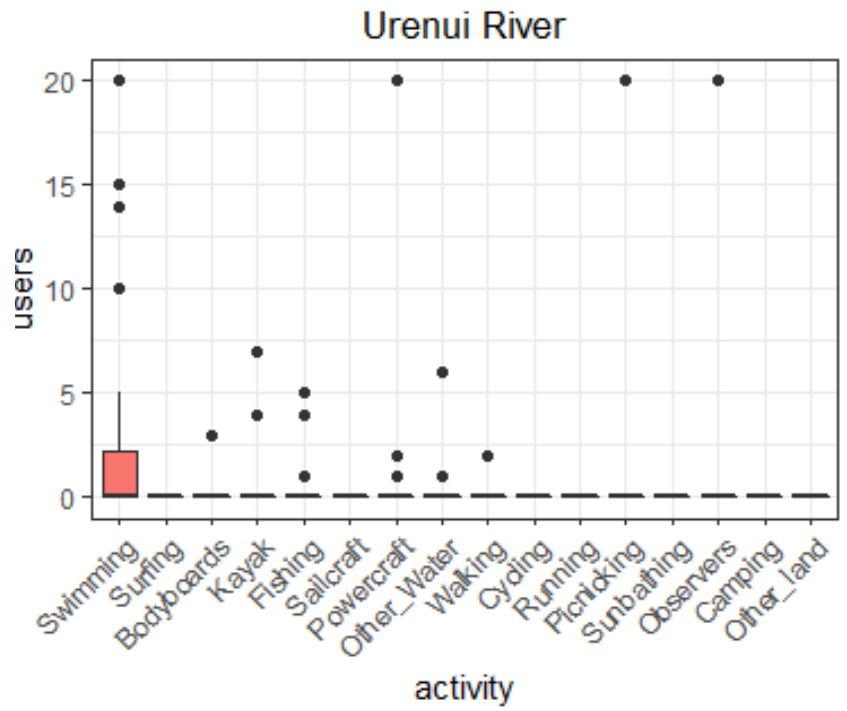
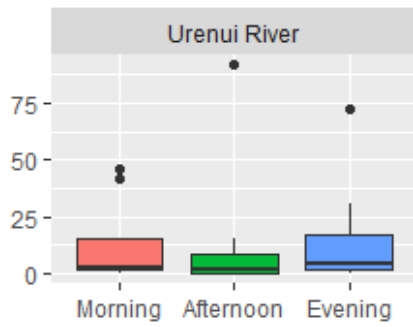


Other land users include photography and tourist groups, and bach users. Note that activity numbers are likely undercounted and distorted at this site due to a lack of consistency in recording. On occasion there were large numbers of users counted on the riverbank and seafront, but little note of what activities they were undertaking.

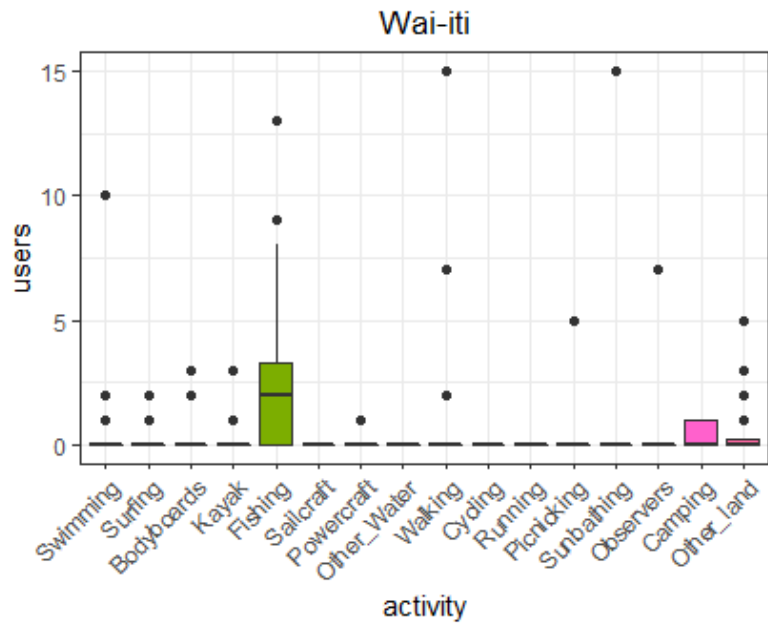
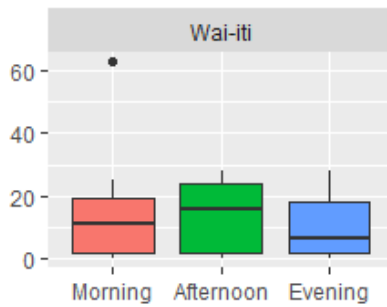
Urenui Beach



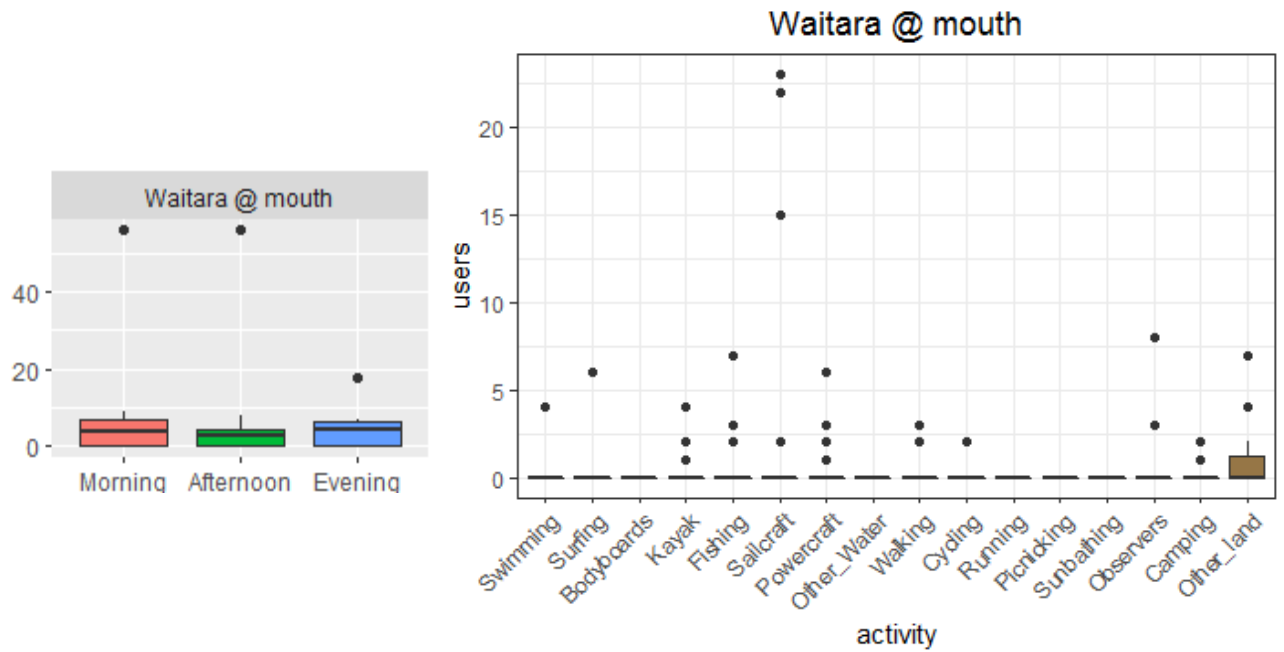
Urenui River



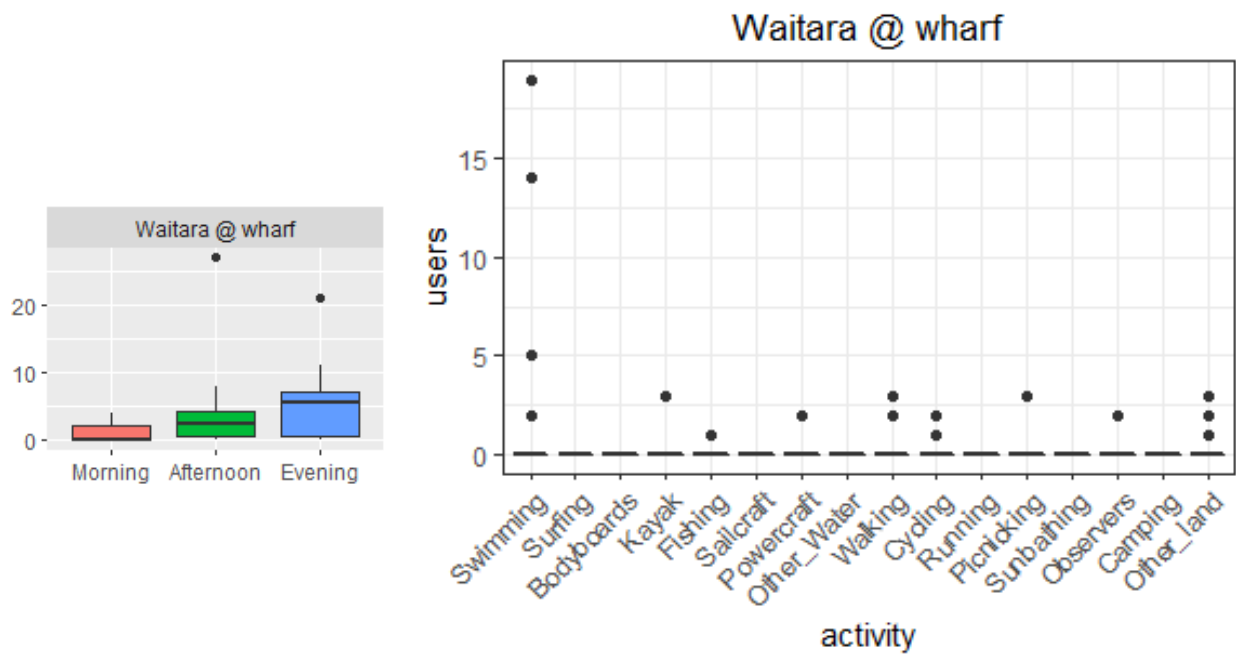
Wai-iti Beach



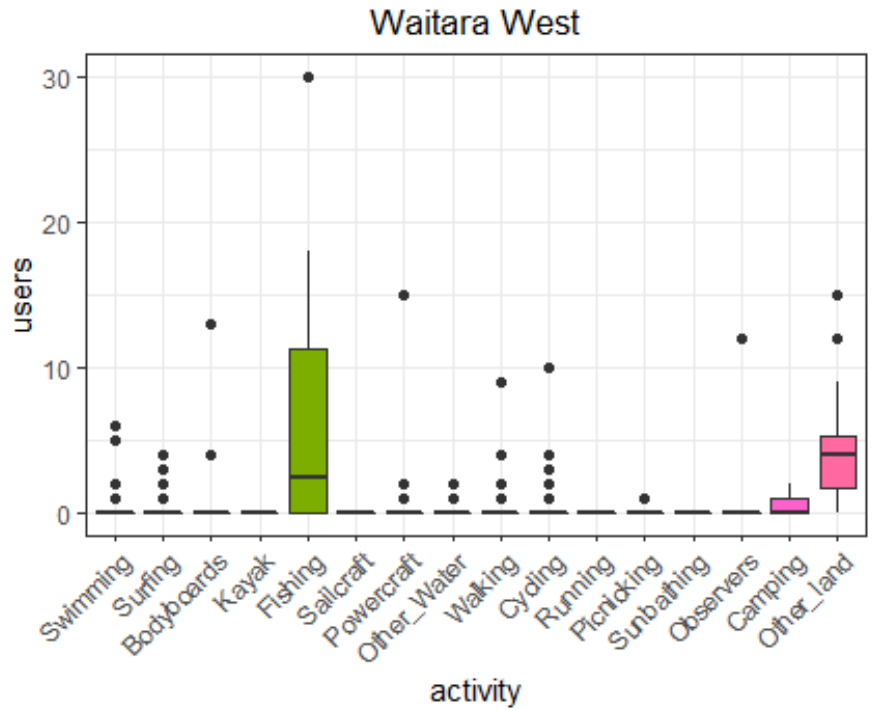
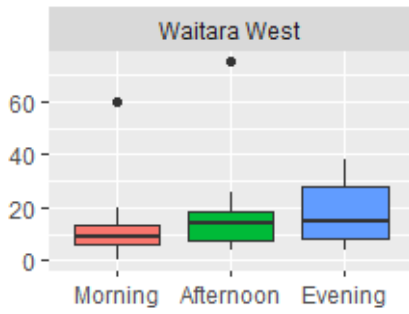
Waitara River (at mouth)



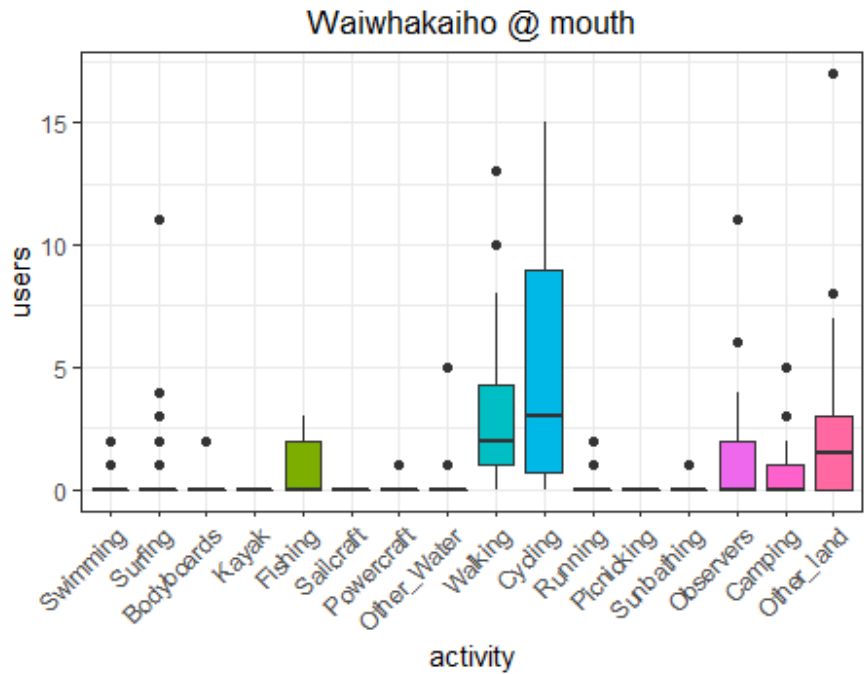
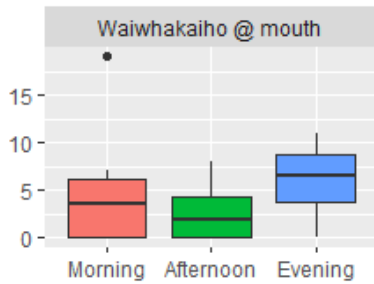
Waitara River (at wharf)



Waitara West Beach

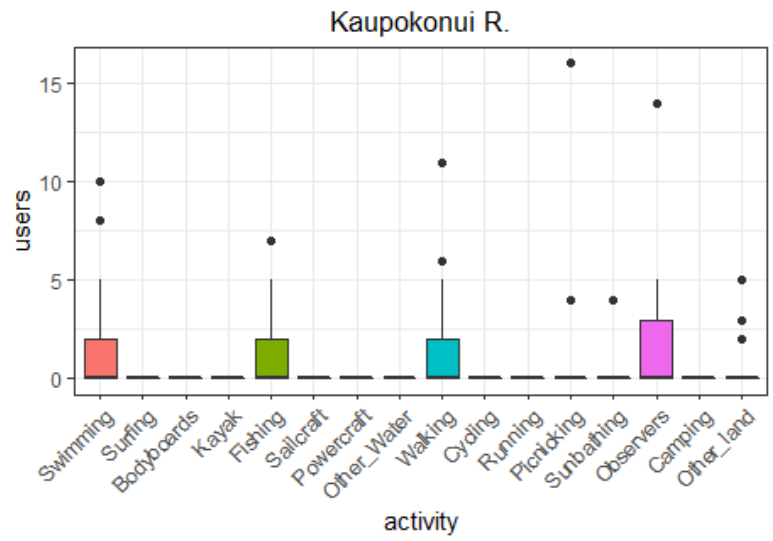
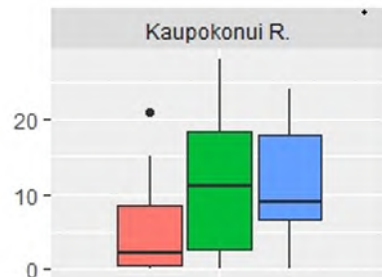


Waiwhakaiho River (at mouth)

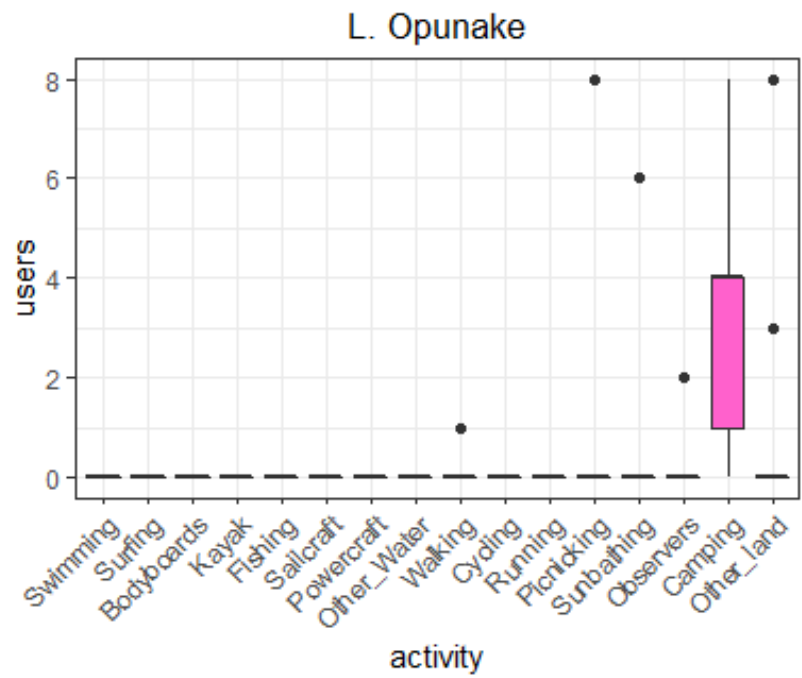
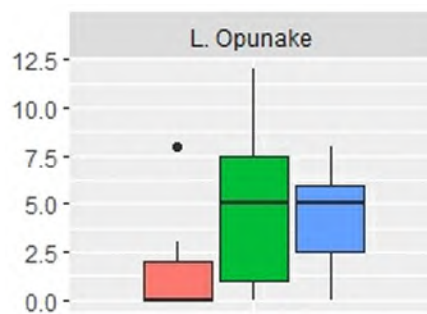


South Taranaki District

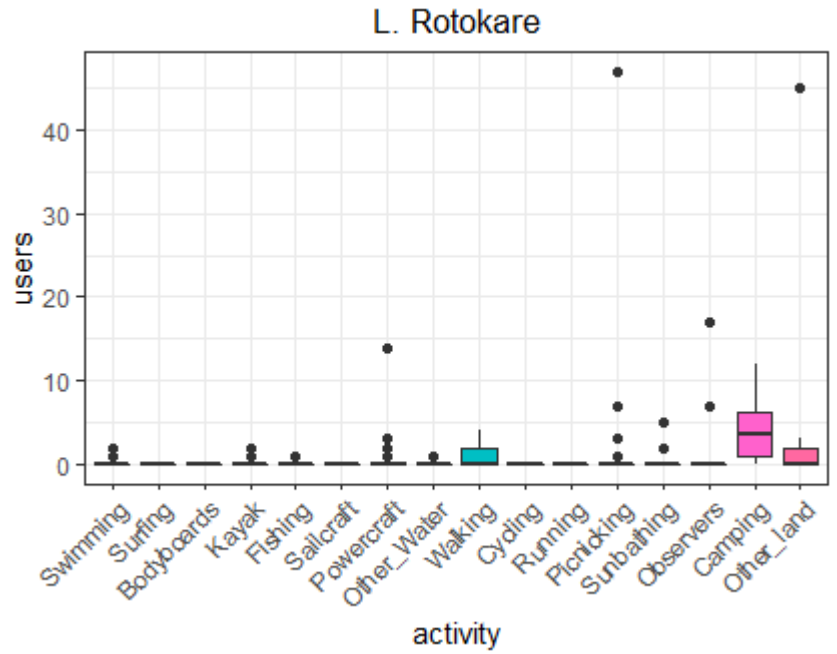
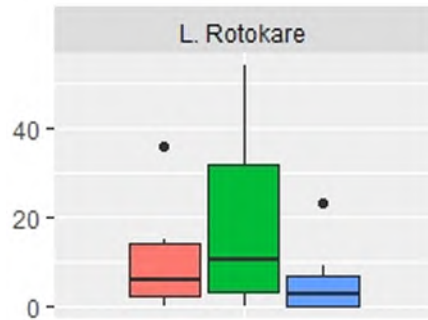
Kaupokonui River (at Lower Glenn Rd)



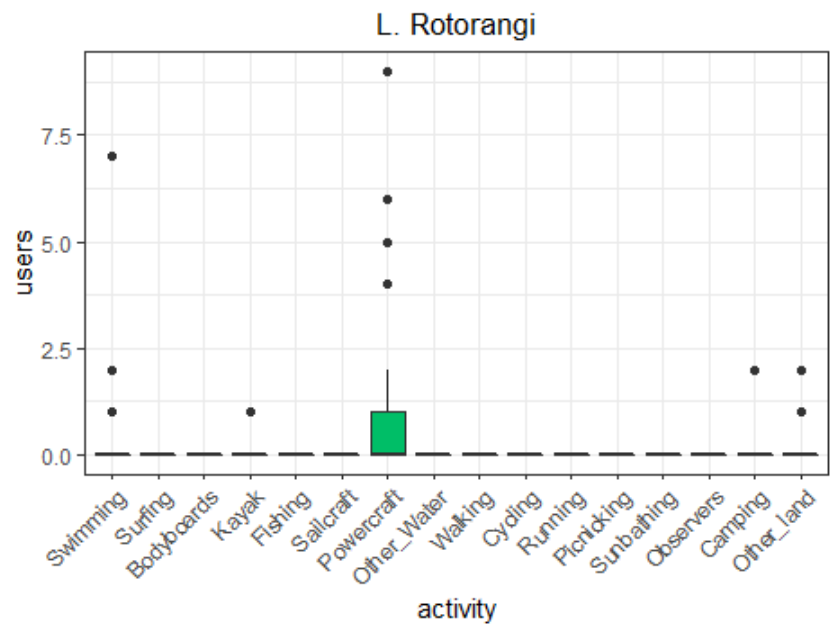
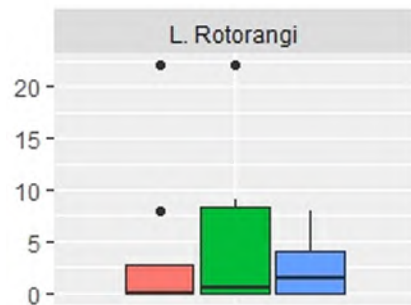
Lake Opunake



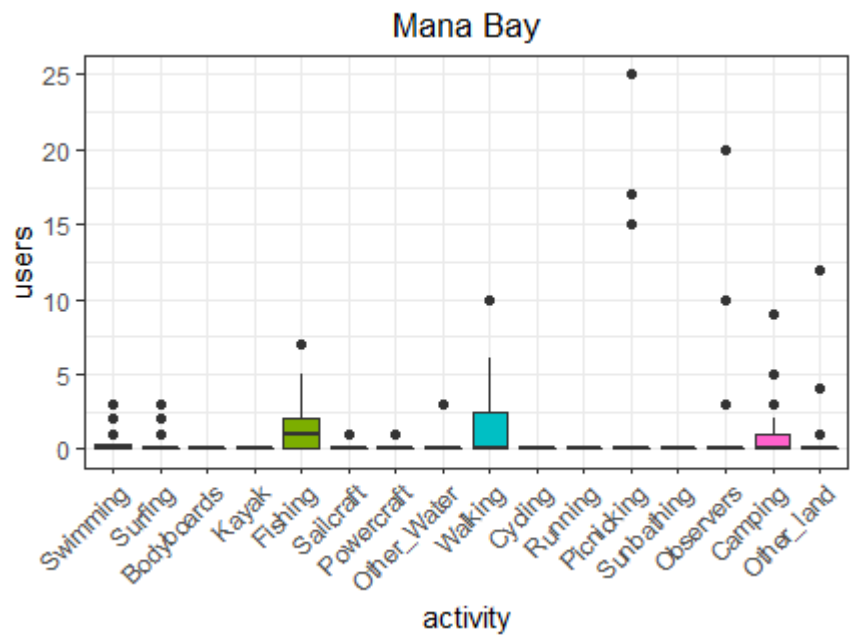
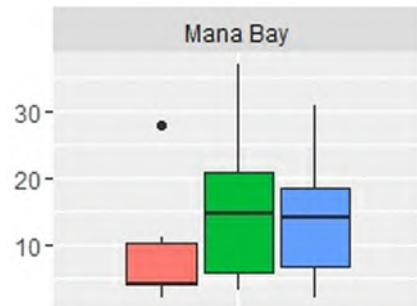
Lake Rotokare



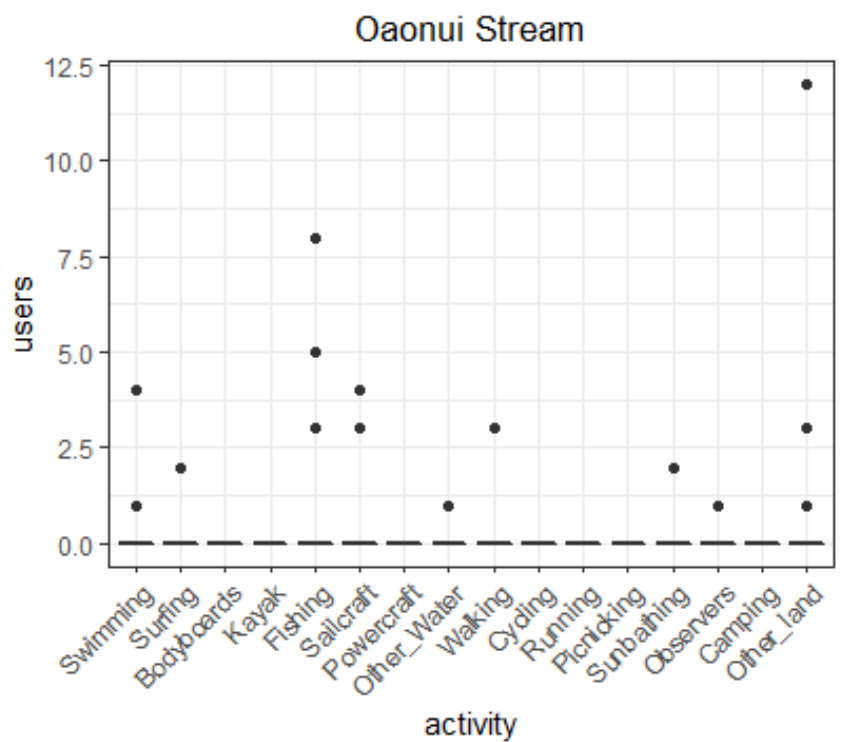
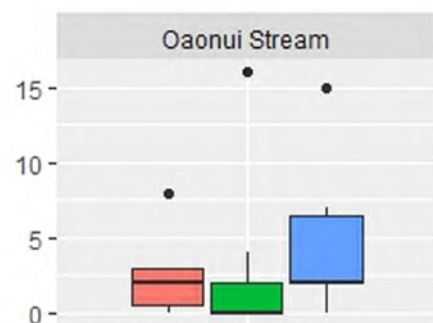
Lake Rotorangi



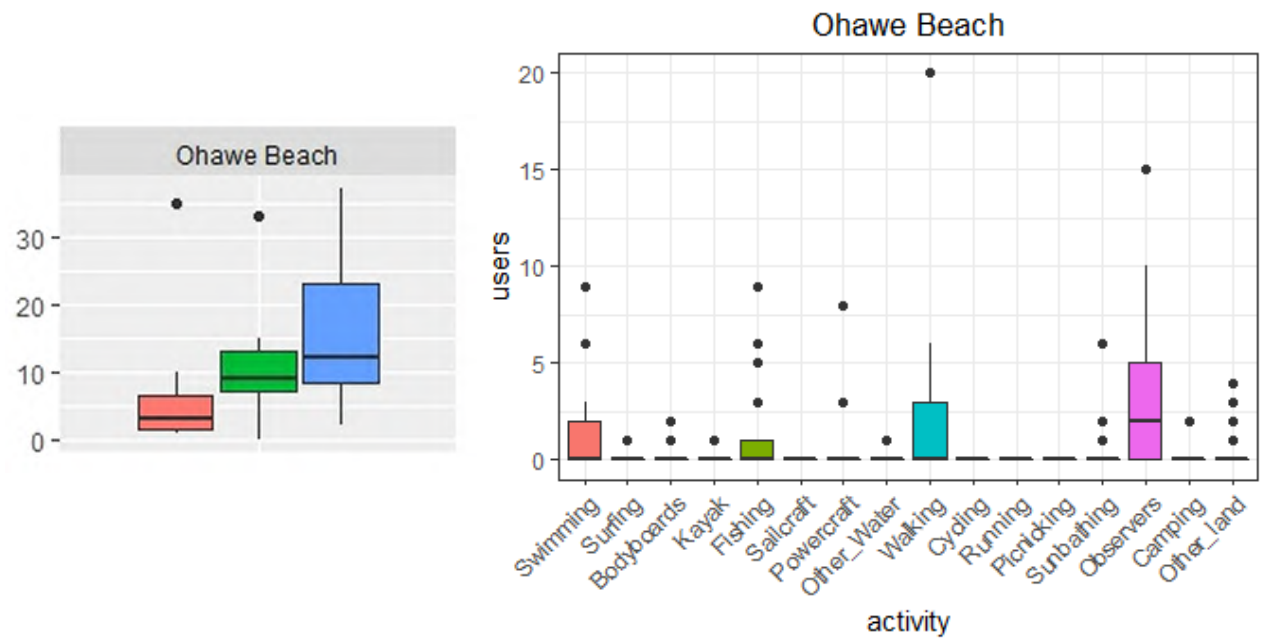
Mana Bay and Patea Beach



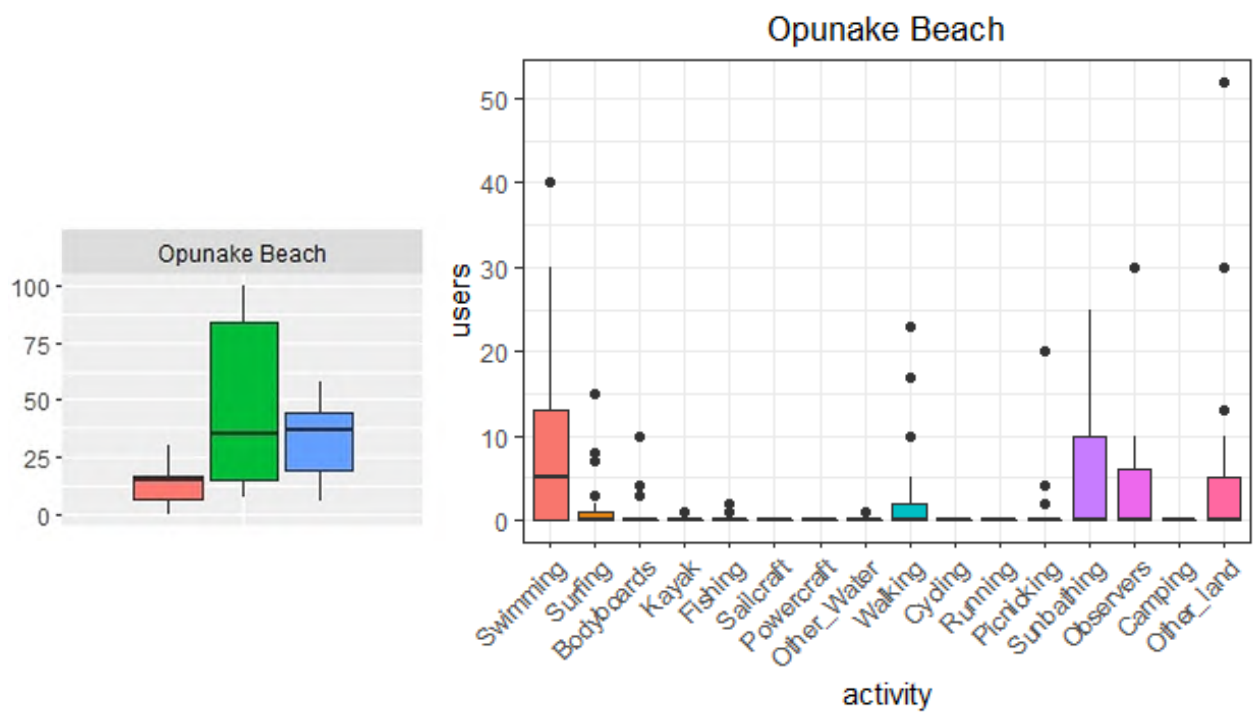
Oaonui Stream (at Lower Kina Rd)



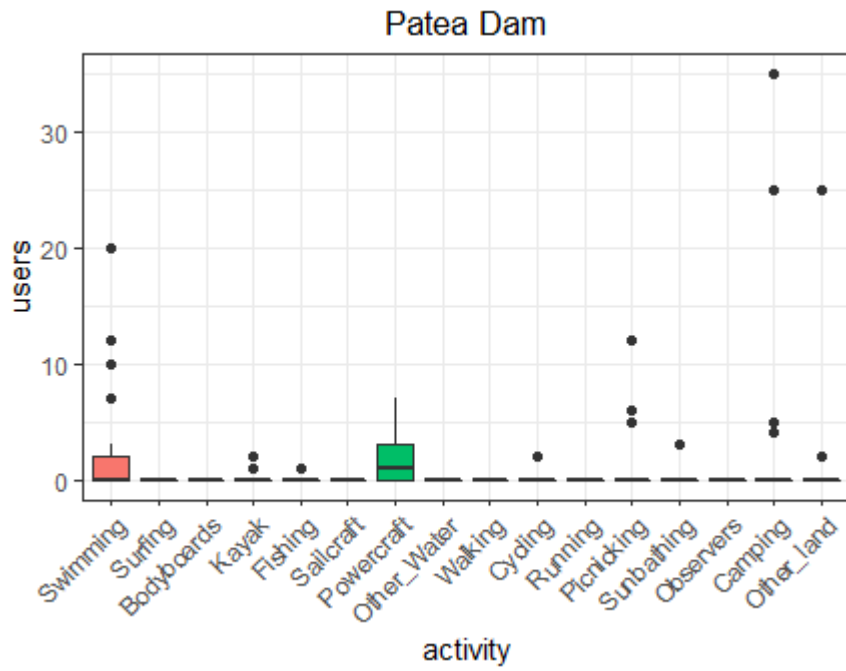
Ohawe Beach (at boat ramp)



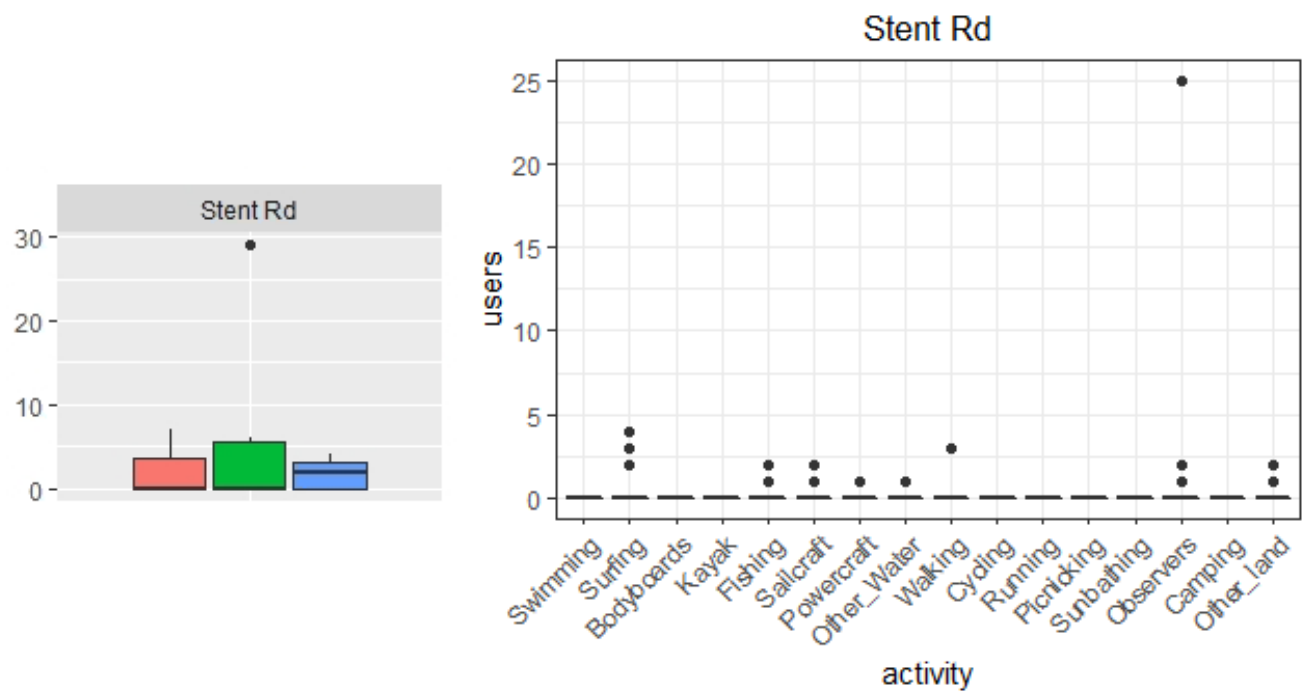
Opunake Beach



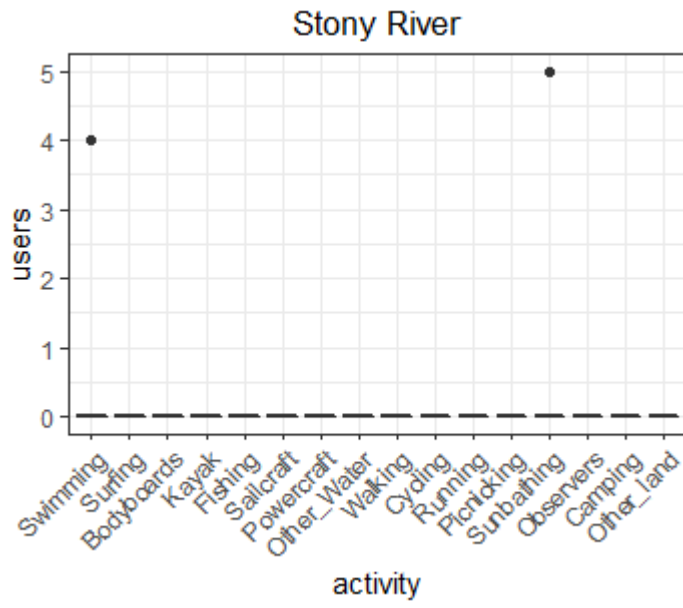
Patea Dam



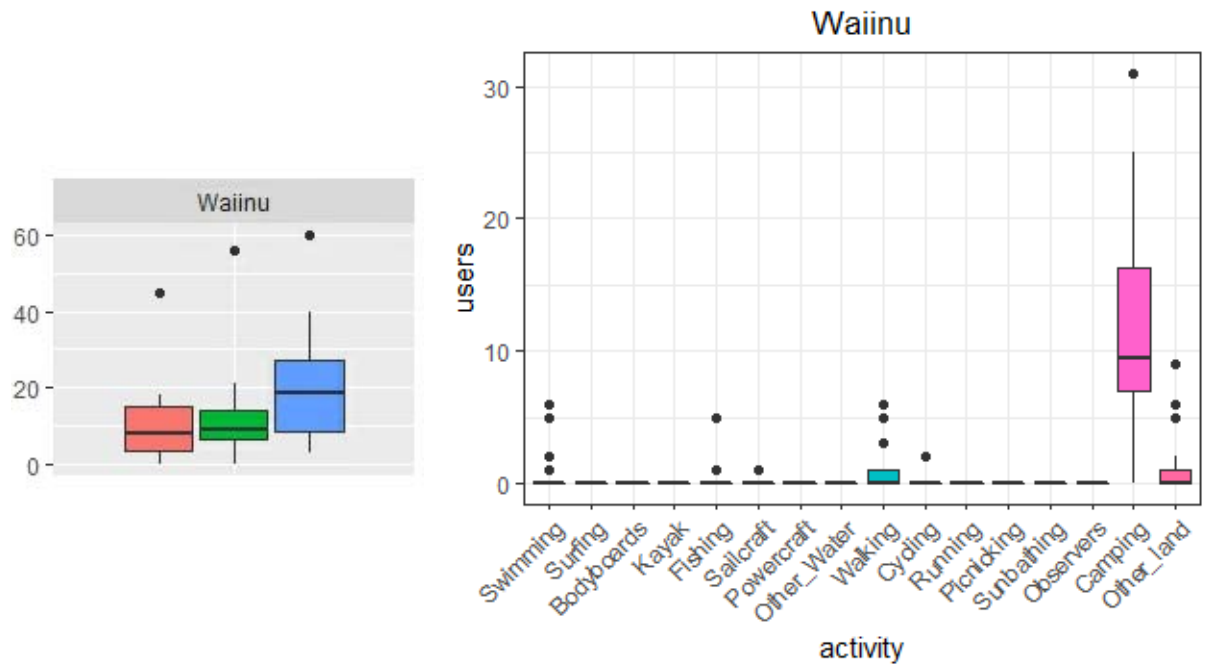
Stent Rd Beach



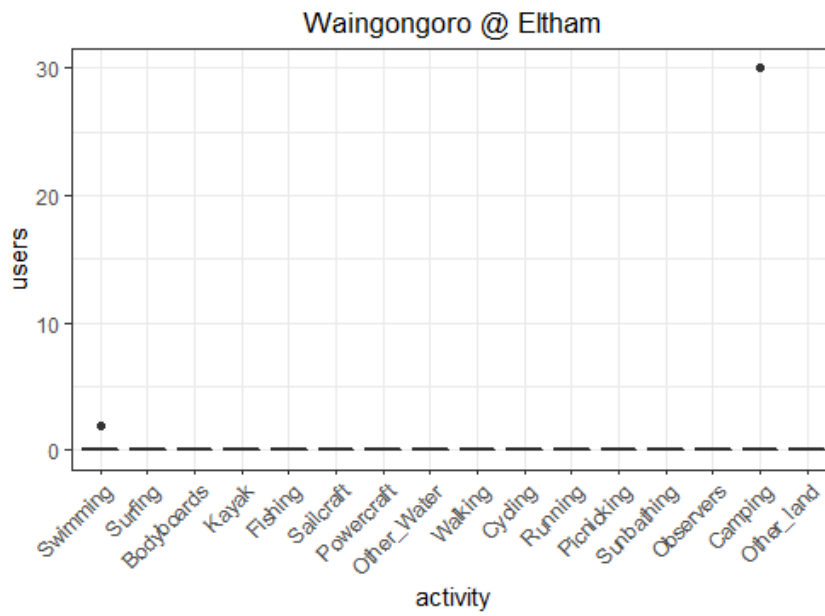
Stoney River (at Upper Kaihihi Rd)



Waiinu

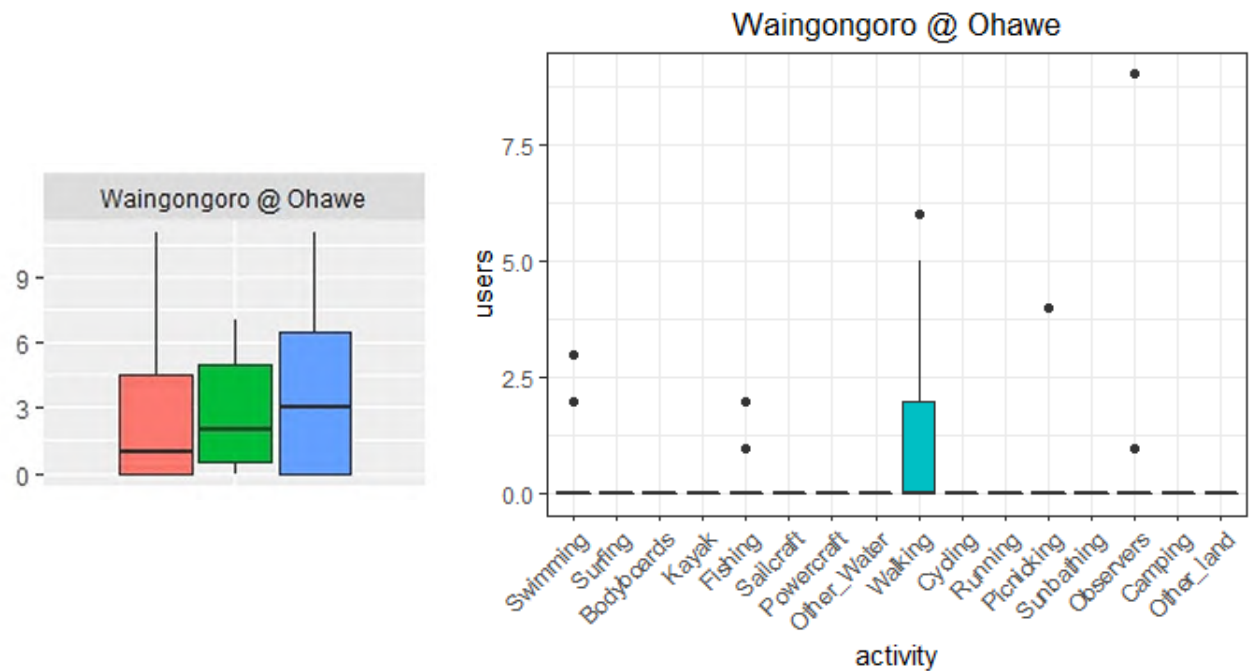


Waingongoro River (at Eltham, EPC)

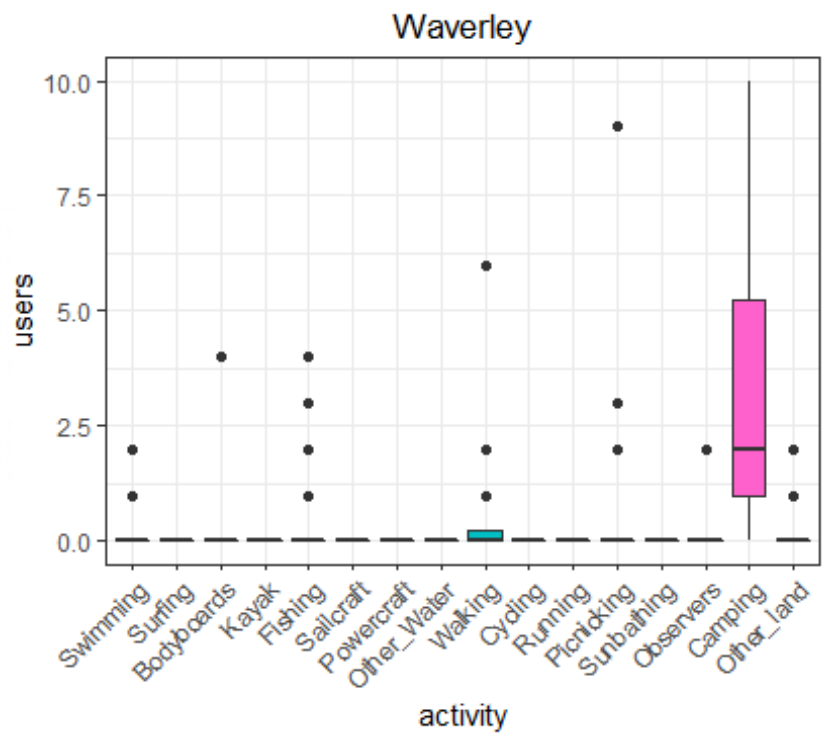
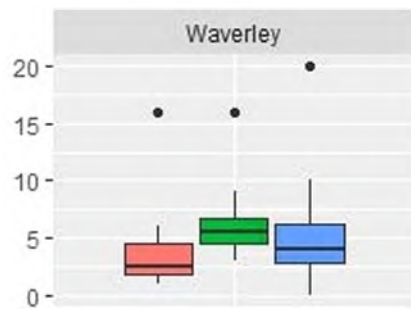


Note that access to this site was severely restricted, with the camp gate being closed on most count surveys. There were only two instances when users were found to be using this site.

Waingongoro River (at mouth, Ohawe)

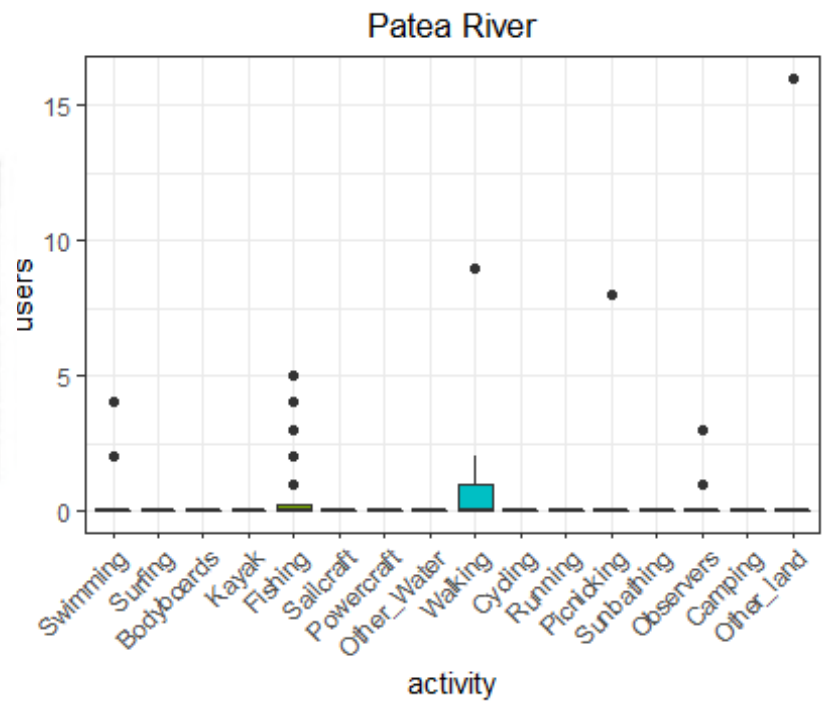
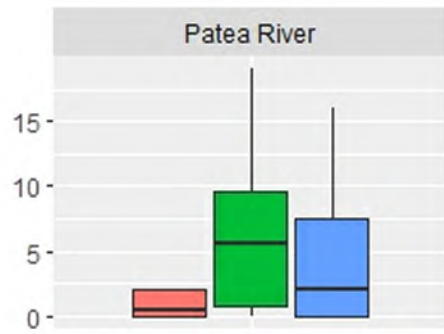


Waverley (Long and Cave Beaches)



Stratford District

Patea River (at the Scout Hall, Stratford)



Appendix VI

Comparison of popularity of activities between
2007 and 2019 recreational questionnaires

Table 1 Most popular activities undertaken at beaches, from questionnaire respondents, 2007 and 2019

Beach Activities	% respondents 2019	rank 2019	rank 2007
Walking	31.2	1	1
Swimming	28.3	2	2
Surfing	9.1	3	9
Relaxing	6.9	4	3
Other	6.1	5	
Scenic appreciation	5.3	6	6
Fishing	3.0	7	4
Camping	1.6	8	10
Picnic/BBQ	1.4	9	5
Jogging	1.2	10	11
Cycling	1.0	11	18
Paddle boarding	1.0	11	
Boating	0.8	13	16
Kayaking/Canoeing	0.6	14	13
Snorkeling/ Diving	0.6	14	
Driving for pleasure	0.4	16	7
Sailing	0.4	16	15
Kite surfing	0.2	18	
Rafting	0.2	18	
Shellfish gathering	0.2	18	14
Spectating	0.2	18	8
Waka Ama	0.2	18	
Wind surfing	0.2	18	16

Table 2 Most popular activities undertaken at rivers, from questionnaire respondents, 2007 and 2019

Rivers	% respondents 2019	rank 2019	rank 2007
Walking	31.4	1	1
Swimming	25.7	2	2
Scenic appreciation	8.6	3	4
Other	6.2	4	
Kayaking/Canoeing	3.7	5	16
Relaxing	3.7	6	3
Cycling	3.5	7	
Whitebaiting	3.3	8	7
Jogging	3.1	9	12
Fishing	2.7	10	6

Picnic/BBQ	2.7	10	5
Camping	1.0	12	10
Jetskiing	1.0	12	
Boating	0.8	13	9
Rafting	0.6	14	15
Spectating	0.6	14	8
Waka Ama	0.6	14	
Water skiing	0.4	17	14
Paddle boarding	0.2	18	
Surfing	0.2	18	

Table 3 Most popular activities undertaken at lakes, from questionnaire respondents, 2007 and 2019

Lake	% respondents 2019	rank 2019	rank 2007
Walking	41.3	1	1
Scenic appreciation	14.7	2	3
Other	9.3	3	
Jogging	5.2	4	10
Cycling	5.0	5	
Picnic/BBQ	3.6	6	5
Swimming	3.6	6	4
Boating	2.9	8	8
Jetskiing	2.7	9	10
Relaxing	2.7	9	2
Water skiing	2.7	9	9
Kayaking/Canoeing	1.8	12	10
Camping	1.4	13	14
Fishing	1.1	14	10
Spectating	0.9	15	6
Paddle boarding	0.7	16	
Driving for pleasure	0.5	17	7